

In the United States Court of Federal Claims

No. 96-237 L

(into which has been consolidated No. 00-513 L)

(Filed: October 27, 2005)

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CANE TENNESSEE, INC.,)	
)	
Plaintiff,)	Trial; Regulatory Taking Claim;
)	<u>Penn Central</u> Economic Impact Factor;
v.)	Market Value of Property
)	
THE UNITED STATES,)	
)	
Defendant.)	
_____)	

Matthew D. Slater, Washington, DC, for plaintiffs. Lee Berger and Larry Dembowski, Washington, DC, of counsel.

Kristine S. Tardiff, Concord, NH, with whom were Kelly A. Johnson, Acting Assistant Attorney General, and Lauren Fischer, Environment and Natural Resources Division, United States Department of Justice, Washington, DC, for defendant. Daniel W. Kilduff, Office of the Solicitor, United States Department of the Interior, Washington, DC, of counsel.

HEWITT, Judge

OPINION AND ORDER

This regulatory takings case is before the court following trial on the issue of whether the property of plaintiff Cane Tennessee, Inc. (Cane) had any non-coal value after June 17, 2000, the date of the governmental action. Following an eight-hour site visit to the property on July 11, 2005, the court conducted a two-day trial in Chattanooga, Tennessee. At trial, the court heard the testimony of five witnesses and admitted sixty exhibits.¹

¹Exhibits offered by plaintiff are designated by PX. Exhibits offered by defendant are designated by DX. Exhibits offered as joint exhibits are designated by JX.

I. Background²

Congress enacted the Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1201-1328 (1986) (SMCRA) in 1977. In 1979, Cane purchased approximately 10,000 acres of property primarily in Bledsoe County, Tennessee, see First Amended Complaint in Cane Tennessee, Inc. v. United States, No. 96-237 L (1996 Am. Compl.) at 2, ¶ 1; Cane II,³ 54 Fed. Cl. at 102, which consisted of “one large tract of about 8,000 acres and four nearly contiguous tracts each of about 500 acres,” Cane III, 57 Fed. Cl. at 122 n.8. “The land is located . . . in a portion of the Cumberland Plateau lying west of the Sequatchie River, and in part adjacent to lands lying within Fall Creek Falls State Park.” 1996 Am. Compl. at 2, ¶ 3. Cane’s acquisition of its property in fee simple “included the

²The court provides a brief summary of the facts of the case and the court’s prior holdings that narrowed the issue for trial. For additional background, see Cane Tennessee, Inc. v. United States, 54 Fed. Cl. 100 (2002) (Cane II) (deciding that the “parcel as a whole” rule provides the applicable “default” analytical framework for a regulatory takings, id. at 104-05; deciding that the timber valuations prepared by the parties’ experts militate against a finding that SMCRA destroyed ‘all economically viable use’ of the Cane property, id. at 107-108; and deciding, in light of the Federal Circuit’s decision in Wyatt, that no taking could have occurred prior to October 5, 1995 “when the government action concerning the unsuitability petition began,” id. at 112); Cane Tennessee, Inc. v. United States, 57 Fed. Cl. 115 (2003) (Cane III) (finding that the relevant parcel for the takings analysis included all of Cane’s tracts of land, id. at 120-23; finding that the economic impact of the regulation was “a diminution of 49.6% of the value of plaintiff’s property,” id. at 125; finding that “a reasonably prudent investor could not have believed that its investment was without regulatory risk,” id. at 127; finding that “the character of the governmental action considered by itself neither requires nor forecloses a finding of a taking,” id. at 129; and finding, based on the three Penn Central factors, no taking occurred, id. at 129); Cane Tennessee, Inc. v. United States, 62 Fed. Cl. 481, 490 (2003) (Cane IV) (on reconsideration of Cane III and in light of the intervening decision in Appollo Fuels, Inc. v. United States, 381 F.3d 1338 (Fed. Cir. 2004), permitting the parties to conduct supplemental discovery on the Penn Central factors of economic impact and investment-backed expectations); Cane Tennessee, Inc. v. United States, 63 Fed. Cl. 715 (2005) (Cane VII) (concluding that “Cane’s investment-backed expectations based on the regulatory regime in place at the time it acquired the property at issue . . . were not reasonable,” id. at 730; and finding that plaintiffs’ experts produced a “flawed” timber valuation opinion that failed to address the issues of interest identified in Cane IV but did “raise some questions about the assumptions underlying” the reports prepared by defendant’s experts that precluded summary judgment on the economic impact factor, id. at 724-25).

³For consistency, the court adopts the convention for short form references to its prior decisions used by the parties in their pretrial memoranda. See Plaintiff Cane Tennessee, Inc.’s Memorandum of Contentions of Fact and Law at 1 n.1; Defendant’s Pretrial Memorandum of Contentions of Fact and Law at 4 n.1. These references are provided in footnote 1, supra.

rights to mine coal from the property and cut timber.” Cane II, 54 Fed. Cl. at 107 (citation omitted); see also 1996 Am. Compl. at 23, ¶ 88. In a related case, the Court of Appeals for the Federal Circuit held that the failure of Cane’s tenant to obtain mining permits did not constitute a taking. See Wyatt v. United States, 271 F.3d 1090, 1093, 1097 (Fed. Cir. 2001) (holding that any governmental delay “in processing the permit application [of Cane’s lessee, Eastern Minerals International, Inc.] was not sufficiently ‘extraordinary’ to constitute a taking”). Cane leased the property for coal mining purposes in 1979. See Wyatt, 271 F.3d at 1093.

In 1995, the United States Department of Interior, Office of Surface Mining (OSM), “accepted and undertook consideration of a petition [filed by several citizens’ groups under SMCRA]⁴ to designate land encompassing and adjacent to plaintiff[’s]

⁴The citizens’ groups filed the petition under section 522 of SMCRA, 30 U.S.C. §1272, “requesting that OSM designate the watershed and viewshed of Fall Creek Falls State Park as unsuitable for surface coal mining operations.” 1996 Am. Compl. at 20, ¶ 81. Section 522 of SMCRA affords

[a]ny person having an interest which is or may be adversely affected . . . the right to petition the regulatory authority to have an area designated as unsuitable for surface coal mining operations, or to have such a designation terminated. Such a petition shall contain allegations of facts with supporting evidence which would tend to establish the allegations. Within ten months after receipt of the petition the regulatory authority shall hold a public hearing in the locality of the affected area, after appropriate notice and publication of the date, time, and location of such hearing. After a person having an interest which is or may be adversely affected has filed a petition and before the hearing, as required by this subsection, any person may intervene by filing allegations of facts with supporting evidence which would tend to establish the allegations. Within sixty days after such hearing, the regulatory authority shall issue and furnish to the petitioner and any other party to the hearing, a written decision regarding the petition, and the reasons therefore.

30 U.S.C. § 1272 (c). Section 522 of SMCRA states that

[u]pon petition [for an unsuitability determination], a surface area may be designated unsuitable for certain types of surface coal mining operations if such operations will--

- (A) be incompatible with existing State or local land use plans or programs; or
- (B) affect fragile or historic lands in which such operations could result in significant damage to important historic, cultural, scientific, and esthetic

property as unsuitable for surface coal mining operations.” Cane II, 54 Fed. Cl. at 104 (alterations added). By Letter of Decision dated June 17, 2000, the Secretary of the Department of Interior designated most of the petition area as unsuitable for surface coal mining (Unsuitability Decision). Cane II, 54 Fed. Cl. at 104. Cane then filed suit seeking compensation for a permanent regulatory taking. See Complaint in Cane Tennessee, Inc. v. United States, No. 00-513 L (2000 Compl.).⁵

Prior to trial, the court issued a number of rulings on motions filed by the parties. Applying the “parcel as a whole” rule, the court first determined that the relevant parcel in this case is the entire Cane property, which is comprised of various tracts of land located on the Cumberland Plateau in Bledsoe County, Tennessee. See Cane II, 54 Fed. Cl. at 105-08 (2002) (court’s analysis focusing on Cane’s 1979 purchase of approximately 10,000 acres of property); see also Cane III, 57 Fed. Cl. at 121-122 & 122 n.8 (describing property conveyed to Cane as consisting of “one large tract of about 8,000 acres and four nearly contiguous tracts each of about 500 acres”) (internal citation omitted); Cane IV, 62 Fed. Cl. at 483-84 (property conveyed to Cane in 1979 included

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- values and natural systems; or
 - (C) affect renewable resource lands in which such operations could result in a substantial loss or reduction of long-range productivity of water supply or of food or fiber products, and such lands to include aquifers and aquifer recharge areas; or
 - (D) affect natural hazard lands in which such operations could substantially endanger life and property, such lands to include areas subject to frequent flooding and areas of unstable geology.

30 U.S.C. §1272 (a)(3).

⁵Consolidated before the court are plaintiff’s two actions, Cane Tennessee, Inc. v. United States, No. 96-237 L (1996 Action) and Cane Tennessee, Inc. v. United States, No. 00-513 L (2000 Action). In its 1996 Action, plaintiff alleged that OSM had effected a “taking of [its] mineral interests and other property located primarily in Bledsoe County, Tennessee . . . [by] engag[ing] in a pattern of . . . repeated, successive requests for information in [the SMCRA] permit proceedings. . . which caused extraordinary delays in those proceedings and prevented mining [of] the coal deposits on plaintiff[’s] land.” 1996 Am. Compl. at 1-2, ¶ 1. In its 2000 Action, plaintiff alleged that the Secretary’s Unsuitability Decision in June 2000 “permanently deprive[d] [plaintiff] of [its] mineral interests in [its] embedded coal, and of other property, without just compensation.” 2000 Compl. at 2, ¶ 2. Cane filed these actions jointly with Colten, Inc., a corporate entity that acquired property and the mineral rights therein “near, and in part adjacent to” Cane’s property. See 1996 Am. Compl. at 2-4, ¶¶ 3-9. Because the court found in Cane III that no taking of Colten’s property had occurred, see 57 Fed. Cl. at 129-131, the court’s references to plaintiff in this opinion refer only to Cane.

the Main Tract, the Higgenbotham Tract, the Grape Knob Tract, the Rainey Ridge Tract and the Pilot Knob Tract); Cane VII, 63 Fed. Cl. at 716 (plaintiff's property located in Bledsoe County, Tennessee).

The court then performed an analysis of the three factors set forth in Pennsylvania Central Transportation Co. v. City of New York, 438 U.S. 104 (1978) to determine whether a regulatory taking had occurred. Cane III, 57 Fed. Cl. at 122. Starting with the economic impact factor, the court stated that an analysis of the economic impact of the governmental action, in particular, the Secretary's Unsuitability Decision in June 2000, required a comparison of the "value that has been taken from the property with the value that remains in the property." Id. at 123 (quoting Walcek v. United States, 49 Fed. Cl. 248, 258 (2001), aff'd, 303 F.3d 1349 (Fed. Cir. 2002)). Citing Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 497 (1987), the court stated that "the proper measure of economic impact is a comparison of the market value of the property immediately before the governmental action with the market value of that same property immediately after the action." Cane III, 57 Fed. Cl. at 123.

In assessing the value of Cane's timber, the experts for both parties estimated the stumpage value of the timber, "a value defined in the case law as the market value of all standing timber on a property." See Cane VII, 63 Fed. Cl. at 720 (citations omitted). Based on the parties' representations about the value of coal and timber on Cane's property and with particular reliance on the then undisputed declaration by plaintiff's expert Michael Black concerning the value of Cane's timber, the court found in Cane III that an approximately 50% diminution in the value of plaintiff's property did not appear to be a sufficiently "serious financial loss" . . . to be a taking." Cane III, 57 Fed. Cl. at 125 (quoting Cienega Gardens v. United States, 331 F.3d 1319, 1341 (Fed. Cir. 2003)). Weighing this finding on the economic impact factor with the character of the governmental action factor and the investment-backed expectations factor under the Penn Central test, the court concluded that no taking of the Cane property had occurred. Id. at 125-129.

Plaintiff moved for reconsideration of this decision asserting, in part, that the court's reliance on the "gross estimated timber value" contained in report of plaintiff's expert Michael Black was improper because that timber value was not adjusted for the following considerations: "(1) a [S]outhern [P]ine [B]eetle infestation adversely affecting pine trees; (2) timber located within Streamside Management Zones (SMZs) or on steep slopes; and (3) the owner's costs and expenses of sale." Cane IV, 62 Fed. Cl. at 485-86 (internal quotations and footnotes omitted). The court found that, "contrary to the guidance in the case law," Cane VII, 63 Fed. Cl. at 720-21, the estimates of stumpage value of Cane's timber included in the valuation opinions of the parties' experts did not

reflect the three considerations described by plaintiff, Cane IV, 62 Fed. Cl. at 486-87. The court decided on reconsideration that these unaddressed factual issues precluded the grant of summary judgment on the issue of timber valuation. Id. at 487. The court also decided that “supplementary briefing and [additional] factual development” were appropriate with respect to the reasonable investment-backed expectations prong of the Penn Central test after the Federal Circuit’s decision in Cienega Gardens. See id. at 490 (internal quotations omitted). However, the court did not disturb its finding that “‘the character of the governmental action considered by itself neither requires nor forecloses a finding of a taking,’” Cane VII, 63 Fed. Cl. at 718 n.4 (quoting Cane III, 57 Fed. Cl. at 129), and the parties did not seek reconsideration of that finding, see id. at 718. In response to plaintiff’s request to enlarge the parties’ originally proposed period of discovery, the court granted an eight-month supplemental period of discovery. See id.

After the parties’ supplemental discovery period ended, defendant filed a renewed motion for summary judgment. Id. Defendant specifically argued that plaintiff had failed to meet its burden of proof in this action by: “(1) . . . fail[ing] to produce a market value timber valuation for the date of the alleged taking, (2) . . . consider[ing] . . . events that occurred well after the date of the alleged taking in its timber valuation analysis, and (3) . . . fail[ing] to quantify the impact of the beetle infestation, the streamside management zones, slash disposal costs and replanting costs on the value of the timber [as directed by the court in Cane IV].” Cane VII, 63 Fed. Cl. at 719 (internal citations omitted). Cane argued that, contrary to defendant’s assertions, “their experts, Michael Black and Ronald Swafford, did consider ‘the [S]outhern [P]ine [B]eetle’s effect on and the required salvage of the Cane timber[] to the extent it was reasonably foreseeable in June 2000’ in evaluating the timber value after the issuance of the Secretary’s [U]nsuitability [D]ecision[, and] . . . did consider but did not include the impact of the streamside management zones in [the] Timber Management Plan valuation analysis because Mr. Black determined that ‘it is not practicable to harvest any timber in a streamside management zone.’” Cane VII, 63 Fed. Cl. at 720 (internal citations omitted). Cane further argued that a Timber Management Plan “is the only reliable way to meaningfully value timber over time” because it considers both income and costs generally over an extended period, id. (citations omitted), and asserted that “the amount of credit to be afforded their expert’s timber valuation [presented] a disputed issue of material fact that preclude[d] the entry of summary judgment on the issue of economic impact,” id. (citations omitted). The court determined that factual issues remained regarding the timber valuation aspect of the economic impact issue, but that plaintiff’s investment-backed expectations were unreasonable as a matter of law. See id. at 730.

With its decision in Cane VII, the court had decided two of the three Penn Central factors in its analysis of Cane’s regulatory takings claim, concluding that “the character

of the governmental action factor considered by itself neither require[d] nor foreclose[d] a finding of a taking,” id. at 718 n.4 (internal quotation omitted), and that plaintiff’s investment-backed expectations were unreasonable as a matter of law, id. at 730. The undecided issue left for trial was the Penn Central economic impact factor--specifically whether the Cane property retained any market value after the Secretary’s Unsuitability Decision in 2000.

Plaintiff argued in its pretrial memorandum that because “the government’s action[] under SMCRA[, specifically, the Unsuitability Decision on June 17, 2000,] caused ‘the total destruction of all economically viable use [of Cane’s property], the conclusion is inescapable that SMCRA constituted a taking of the [Cane] coal property.’” Plaintiff Cane Tennessee, Inc.’s Memorandum of Contentions of Fact and Law (Cane’s Pretrial Mem.) at 26-27 (quoting Whitney Benefits, Inc. v. United States, 926 F.2d 1169, 1177 (Fed. Cir. 1991)). Plaintiff further argued that “the timber adds no value to the Cane tracts” Cane’s Pretrial Mem. at 40. Contending that a categorical taking had occurred, plaintiff asserted that Whitney Benefits provides the proper legal authority for the decision in this case. See id. at 1 (citing Whitney Benefits, 926 F.2d at 1174 (finding that SMCRA deprived the coal property owner of all economic use of its property)).

The Supreme Court denied a petition for certiorari in Whitney Benefits, see United States v. Whitney Benefits, Inc., 502 U.S. 952 (1991), but subsequently addressed what constitutes a categorical regulatory taking. In Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Council, the Supreme Court explained that the categorical rule set forth in Lucas v. South Carolina Coastal Council requiring compensation for a regulatory taking “when a regulation deprives an owner of ‘all economically beneficial uses’ of his land,” Tahoe-Sierra, 535 U.S. 302, 330 (2002) (quoting Lucas, 505 U.S. 1003, 1019 (1992)), applies only in “‘the extraordinary circumstance when no productive or economically beneficial use of land is permitted.’” Tahoe-Sierra, 535 U.S. at 330 (quoting Lucas, 505 U.S. at 1017); see also Bass Enterprises Production Co. v. United States, 381 F.3d 1360, 1365 (Fed. Cir. 2004) (stating same). The Supreme Court further explained that, absent a showing of a “complete elimination of value” or a “total loss,” courts must apply a Penn Central analysis to determine whether a regulatory taking has occurred. Tahoe-Sierra, 535 U.S. at 330 (quoting Lucas, 505 U.S. at 1019-20 n.8); Bass Enterprises, 381 F.3d at 1365.

Here, defendant argued in its pretrial memorandum that, consistent with the court’s decisions in Cane II, 54 Fed. Cl. at 108 and Cane III, 57 Fed. Cl. at 122, Cane’s taking claim requires a Penn Central analysis. Defendant’s Pretrial Memorandum of Contentions of Fact and Law at 4. Defendant specifically argued that “Cane’s property

continues to have substantial market value despite the regulatory action[, and that] [t]he lack of severe economic impact, balanced against Cane's lack of reasonable investment-backed expectations and the character of the government action [compels the] . . . conclusion . . . [that] there has been no permanent regulatory taking of Cane's property." Id. at 3-4.

II. Discussion

A. The Applicable Law

The legal standard for evaluating the economic impact of the Secretary's designation of a portion of Cane's lands as unsuitable for surface coal mining operations is "a comparison of the market value of the property immediately before the governmental action with the market value of that same property immediately after the action." Cane III, 57 Fed. Cl. at 123 (citing Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 497 (1987)); see also Vaizburd v. United States, 384 F.3d 1278, 1283 (Fed. Cir. 2004) (recognizing that "[a] comparison of the property's market value before and after a taking is one appropriate method of valuation"). An "early adopted" measure of "just compensation" as contemplated by the Fifth Amendment of the United States Constitution, "market value is what a willing buyer would pay in cash to a willing seller." United States v. Miller, 317 U.S. 369, 374 (1942). In United States v. 564.54 Acres of Land, 441 U.S. 506, 516 (1979), the Supreme Court noted that the measure of just compensation adopted in a particular takings case should not "conflict with th[e] Court's efforts to develop relatively objective valuation standards." Accord United States v. 50 Acres of Land, 469 U.S. 24, 35 (1984) (recognizing the "principle that just compensation must be measured by an objective standard that disregards subjective values which are only of significance to an individual owner").

The Supreme Court has also provided guidance regarding what measures of value do not represent "market value." The original cost of property is not a proper measure of market value. Brooks-Scanlon Corp. v. United States, 265 U.S. 106, 123 (1924) ("It is the property and not the cost of it that is protected by the Fifth Amendment.") (citation omitted); United States v. Toronto, Hamilton & Buffalo Navigation Co., 338 U.S. 396, 403 (1949) ("Original cost is well termed the 'false standard of the past' where, as here, present value in no way reflects that cost.") (footnote omitted). Nor does the investment value of the property define its market value. Olson v. United States, 292 U.S. 246, 255 (1934) (stating that the compensation owed for a taking is the "market value of the property at the time of the taking contemporaneously paid in money" and observing that such value "may be more or less than the owner's investment. He may have acquired the property for less than its worth or he may have paid a speculative and exorbitant price.

Its value may have changed substantially while held by him.”); U.S. Tenn. Valley Auth. v. Powelson, 319 U.S. 266, 285 (1943) (“The constitutional obligation of the United States . . . [under] the Fifth Amendment allows the owner only the fair market value of his property; it does not guarantee him a return of his investment.”).

The Supreme Court stated in Olson that “[t]he highest and most profitable use for which the property [of a takings action] is adaptable and needed or likely to be needed in the reasonably near future is to be considered . . . to the full extent that the prospect of demand for such use affects the market value while the property is privately held.” 292 U.S. at 255. Citing Olson for the proposition that “[a]n owner of property . . . is entitled to have the fair market value of his property determined by reference to its highest and best use,” this court has stated that “[a]ny and all factors, which would cause a reasonable seller to ask a higher sale price for the property and which would induce a reasonable buyer to pay a higher sale price for the property, should be considered.” Snowbank Enters., Inc. v. United States, 6 Cl. Ct. 476, 484-85 (1984). The uses for which a property is suitable, not merely the uses to which a landowner has devoted his land, inform the determination of a property’s market value and the just compensation to which the landowner may be due. Olson, 292 U.S. at 255 (“The sum required to be paid the owner does not depend upon the uses to which he has devoted his land but is to be arrived at upon just consideration of all the uses for which it is suitable.”).

Among the accepted methods of determining market value before and after a taking is a comparable sales approach. See Vaizburd, 384 F.3d at 1283; see also Fla. Rock Indus., Inc. v. United States, 18 F.3d 1560, 1563 (Fed. Cir. 1994) (discussing the use of a “standard comparable sales valuation method” in a proceeding to determine the fair market value of the property alleged to have been taken and thereby assess the economic impact of the regulatory action); Norman v. United States, 63 Fed. Cl. 231, 270-71 (2004) (recognizing the “‘comparable sales method’ [a]s the generally accepted metric for determining the economic impact [of a regulatory taking]”); Good v. United States, 39 Fed. Cl. 81, 106 (1997) (“The most reliable method of arriving at the fair market value of property, particularly unimproved property, is through the ‘sales comparison approach.’”). It is understood that the value of comparable sales data varies directly with the similarity of the comparable properties to the property claimed to have been taken. San Nicolas v. United States, 617 F.2d 246, 251 (Ct. Cl. 1980) (“Reliability of the market data approach to valuation is dependent upon the selection of transactions with comparable data, on the accuracy of adjustments for differences in time, size, and other variables, and upon verification of the sales data.”); accord Snowbank Enters., 6 Cl. Ct. at 485 (“The validity of the comparable sales approach to valuation, however, depends upon the degree of comparability between the subject property and the properties used for comparison.”).

Market value may also be determined using an income capitalization approach. See Snowbank Enters., 6 Cl. Ct. at 485; Foster v. United States, 2 Cl. Ct. 426, 447 (1983) (recognizing, as a method of determining market value, “the capitalization of income approach (sometimes referred to as ‘discounted cash flow’ or the ‘present worth of future income’), which relates earnings that reasonably could be expected to be derived from the property, discounted for risks and other variables, to arrive at a present value”); Whitney Benefits, Inc. v. United States, 18 Cl. Ct. 394, 408-09 (1989) (approving use of an income capitalization method of property valuation in the absence of adequate comparable sales), aff’d, 926 F.2d 1169 (Fed. Cir. 1991); Bassett, N.M. LLC v. United States, 55 Fed. Cl. 63, 76 (2002) (discussing plaintiff’s calculation of “the fair market value of aggregate mining on [its] [p]roperty prior to the taking by determining the present value of the future income stream of aggregates that [p]laintiff could have mined on the [p]roperty absent the taking over a twenty year period”). “Under this method, the value of a particular piece of property is shown by calculating the present value of the income the property could be expected to generate over its useful economic life.” Snowbank Enters., 6 Cl. Ct. at 485 (citation omitted).

A third method of valuation is the cost approach, alternatively referred to as the replacement cost or reproduction cost. See Snowbank Enters., 6 Cl. Ct. at 485. Applied to improved land, the cost approach “produces a valuation estimate by establishing the cost to replace the property, less depreciation, at a different but comparable site. Id. (citing Gelin & Wright, The Federal Law of Eminent Domain, § 4.1 at 200); see also Foster v. United States, 2 Cl. Ct. 426, 447 (1983) (recognizing, as an alternative method of determining market value, “the cost approach, which uses depreciated replacement cost as the value of the asset”); Yaist v. United States, 17 Cl. Ct. 246, 260 (1989) (stating that “the cost approach method determines the value of [improved] property by estimating the cost to construct the [improvement on the] property at the time of the taking, less depreciation”).

The Federal Circuit, however, has made clear that it is “unwilling to restrict the trial courts to any single basis for determining fair market value,” Barrett Refining Corp. v. United States, 242 F.3d 1055, 1061 (Fed. Cir. 2001) (quoting Servalli v. United States, 845 F.2d 1571, 1575 (Fed. Cir. 1988)), preferring instead to afford trial courts “considerable discretion to select the method of valuation that is most appropriate in the light of the facts of the particular case,” Servalli, 845 F.2d at 1575. The selected method of valuation may be “a single method or some combination of different methods.” Id. No matter what valuation method is selected for a particular parcel of real property, the Supreme Court has cautioned that the “assessment of market value involves the use of assumptions, which make it unlikely that the appraisal will reflect true value

with nicety.” Miller, 317 U.S. at 374.

One of the methods employed by both parties’ timber experts in this case to estimate the value of Cane’s timber was an inventory of the timber on Cane’s property to determine the timber’s stumpage value. “[S]tumpage value is the market value of timber before it is cut; the amount that a purchaser would pay for standing timber to be cut and removed.” Gerdes v. Bohemia, Inc., 744 P.2d 275, 278 (Or. App. 1987). See also Miller v. United States, 620 F.2d 812, 825 (Ct. Cl. 1980) (“Stumpage is the standing timber to be evaluated.”); Cedar Lumber, Inc. v. United States, 5 Cl. Ct. 539, 547 n.10 (1984) (defining “[s]tumpage” payments [as] payments for the value of standing timber”). Courts have recognized stumpage value as a proper measure of the market value of timber. See Peters v. United States, 694 F.2d 687, 689 (Fed. Cir. 1982) (considering the effect of a written modification of a timber sale contract in a national forest, and noting that “the estimated fair market value of the timber [is] known as ‘stumpage.’”); Thomas Creek Lumber & Log Co. v. United States, 19 Cl. Ct. 710, 713 (1990) (recognizing in an action for breach of a timber sale contract that “stumpage value ordinarily [is] an appropriate measure of the value of the timber”), aff’d, 928 F.2d 411 (Fed. Cir. 1991); see also Gerdes, 744 P.2d at 278 (using the stumpage value of cut trees as the measure of damages in a timber trespass case).

Even though plaintiff offered the opinion of its expert Michael Black during motion practice in this case regarding Cane’s stumpage value, Cane asserted in its pretrial memorandum that

[s]tumpage is not useful for determining the effect that timber has on the fair market value of property. For a takings analysis of a large property, it is impermissible to rely on stumpage value because the value of “standing timber of large woodlots” cannot “be determined by multiplying estimated quantity times a fixed price per unit,” and therefore “a valuation based upon a multiplication of these elements is so speculative that it must be rejected.”

Cane’s Pretrial Mem. at 21 (quoting Timberlands, Inc. v. Me. State Highway Comm’n, 284 A.2d 894, 896-97 (Me. 1971)). Cane’s reliance on Timberlands is misplaced. In its discussion of the type of evidence to be considered in ascertaining the market value of real property, the Timberlands court rejected only “evidence inherently incompetent or devoid of all probative value, [or . . . tainted by elements of speculation and conjecture.” Timberlands, 284 A.2d at 897. The court stated:

Where the value of real estate is in issue, any evidence which will aid the

[trier of fact] in fixing the fair market value of the property is admissible for [the trier of fact's] consideration, provided such evidence is not speculative in nature, would be considered by a prospective seller or purchaser and tends to enhance or depreciate the value of the property taken. Common sense dictates, however, that the willing seller of timberland property and the willing buyer thereof will take into account what they deem to be the fair market value of the standing timber thereon in determining what is a fair price for the land on which the timber stands.

Timberlands, 284 A.2d at 897 (internal citations and quotation omitted). The Timberlands court noted that the cross-examination of an expert on the “[t]he estimated detailed costs of uncertain procedures . . . in figuring prospective future profits from sales of standing timber of large woodlots . . . [would permit the trier of fact to] test[] the accuracy and soundness of the [knowledgeable] expert’s opinion of [stumpage] values.” Id. Contrary to Cane’s assertions in its pretrial memorandum, the Timberlands court did not discredit the use of stumpage to determine market value, rather the court warned against relying on expert testimony that is not “based upon sound principles” or does not have a “reasonable basis.” Id.

B. The Testimony of the Parties’ Experts

At trial, the court heard testimony from the parties’ expert witnesses regarding their methods of estimating the market value of Cane’s property after the issuance of the Unsuitability Decision in June 2000. Ronald Swafford and Michael Black testified as expert witnesses for plaintiff. Wayne Williams and Steven Burak testified as expert witnesses for defendant. Douglas Siddell, a twenty-six year employee with the Department of Interior, Office of Surface Mining, offered brief testimony identifying Tim Eagle, with whom Mr. Swafford had discussed reclamation issues that Mr. Swafford believed could apply to the box cut on the Cane property.

Mr. Swafford, who is an experienced realtor and appraiser with a long association with the Cane property and has testified in court “probably 30, 40 times . . . [o]n land values,” Transcript of Trial (Tr.) at 35:10-20, opined that the Cane property had no market value following the Secretary’s Unsuitability Decision in June 2000. As he explained during his testimony, his opinion was not based on an appraisal of the Cane property but rather was informed, in part, by his own personal aversion to disturbing the aesthetics of the property by timber cutting. Moreover, his opinion that the property lacks market value was undercut by his own testimony concerning his joint venture with Cane to develop parcels of land formerly owned by Cane into a residential area, by his views about possibilities for developing the property in the 1980s and by an overture he

himself had made to Cane about purchasing the property in 1992.

Mr. Black, an experienced forester, prepared a discounted cash flow analysis in 2004 to reflect the investment value of the Cane property as of June 2000 rather than the market value of the property at that time. Based on that analysis, he opined that the investment value of the Cane property was negative. Mr. Black acknowledged during his testimony that stumpage value provides an estimate of market value, and he testified that, using the stumpage method of valuation in 2002, he estimated a market value for Cane of \$3,944,313 as of June 2000.

Defendant's experts, Mr. Williams and Dr. Burak, also offered opinions of Cane's market value as of June 2000. Their respective opinions of value were remarkably close to Mr. Black's stumpage valuation of \$3,944,313.

Mr. Williams, a forester, performed a timber inventory on Cane's property in 2001 and estimated the value of Cane's timber as of June 2000 using the stumpage method of valuation. At trial, he opined that the stumpage value of Cane's timber as of June 2000 was \$4,247,078.

Dr. Burak, a forester and an appraiser, appraised Cane's property using three different methods of valuation: (1) the comparable sales approach; (2) the cost approach; and (3) the income capitalization approach. Using the comparable sales approach, Dr. Burak estimated that the value of Cane's property as of June 2000 was \$4,850,000. Using the cost approach, Dr. Burak estimated that the value of Cane's property as of June 2000 was \$4,700,000. Using the income capitalization approach, Dr. Burak estimated that the value of Cane's property as of June 2000 was \$4,490,000. Reconciling the three methods of valuation, Dr. Burak opined that the market value of the Cane tracts as of June 2000 was \$4,775,000.

Mr. Siddell, an official with the Department of Interior, Office of Surface Mining for twenty-six years, also offered limited testimony for defendant. He identified Mr. Eagle, with whom Mr. Swafford had spoken regarding reclamation issues, as an employee with the Tennessee Department of Environment and Conservation. Tr. at 590:2-8 (Siddell). He testified that he had no knowledge that Mr. Eagle had ever worked for the federal Office of Surface Mining. Id. at 590:9-11 (Siddell).

A licensed real estate broker and a certified residential appraiser specializing "in farm land and larger tracts of . . . vacant land," Tr. at 32:14; 33:6-8, 15-16; 116:15-20, Mr. Swafford has an office located "[i]n Pikeville, Tennessee, Bledsoe County," the same county in which the Cane property is located. Id. at 32:16. With nearly thirty years

of experience, id. at 32:18, he conducts his business, Swafford Realty & Auction, in Bledsoe County and the surrounding counties, specifically, Cumberland County, Van Buren County, Sequatchie County, Marion County, Hamilton County, and Rhea County, id. at 32:21-33:3. See also Joint Exhibit (JX) 303 (color copy of a topographic map delineating the Cane property as of June 2000 and the Cane property sold prior to June 2000); JX 304 (a black and white map, prepared by Sizemore & Sizemore, Inc., identifying by circled numbers particular areas on the Cane property).

For twenty years or more, Mr. Swafford has been a board member of Citizens Tri-County Bank (Citizens Bank), Tr. at 35:25-36:1; Citizens Bank has “12 locations in six counties . . . surrounding Bledsoe County,” id. at 36:2-5. Based on his experience serving on the bank’s loan committee and reviewing property appraisals submitted to the loan committee by the bank’s various loan officers, Mr. Swafford has become familiar with land valuation in Bledsoe County and the surrounding counties. Id. at 37:9-38:5. For both Citizens Bank and its competitor, Sequatchie County Bank, Mr. Swafford has performed appraisals of properties offered as collateral for loans. See id. at 38:9-22. Mr. Swafford is authorized by the State of Tennessee under a residential certification to appraise properties valued up to one million dollars, id. at 38:23-39:4; 116:15–20, for properties that have value in excess of one million dollars, a certified general appraiser must “sign off on” Mr. Swafford’s appraisal report, id. at 39:5-11.

Mr. Swafford testified that his first professional association with the Cane property occurred in the 1970s, prior to the Wyatts’ sale of their property to Cane, when Mr. Wyatt sought Mr. Swafford’s assistance with the sale of some “outlying parcels” of the Wyatts’ property. Tr. at 43:24-44:11; 47:5-9. Mr. Wyatt then asked Mr. Swafford to handle the sale of all of the Wyatts’ property in Tennessee. Id. at 47:7-19. Mr. Swafford did not participate, however, in the sale of the Main Tract to Cane. Id. at 47:19-20.

Mr. Swafford testified that after the sale of the Wyatts’ property to Cane, he performed certain services for Milton Bernos, the owner of Cane’s corporate lessee, Eastern Minerals. Id. at 48:7-50:4. In particular, Mr. Swafford kept records in connection with the sales of timber from the Cane property that Mr. Bernos authorized in the mid-1980s “to get a little revenue” from the property. Id. at 49:20-50:4; see also PX 136 (Milton J. Bernos Timber Account - Pay Outs) (including a summary of the fees and taxes paid from the timber income and a log of the amounts received from the cut timber). His records indicate that, between 1982 and 1990, the timber income from the Cane property was \$117,150.92. PX 120 (memorandum of 8/4/92 from Ronald H. Swafford Realty to Ronnie Ragoff summarizing the Bernos Timber Accounts) at C02725. Mr. Swafford’s records also indicate that, during that same time period, Cane’s lessee, Eastern Minerals, paid the property taxes. Id. (showing under the heading

“PAY-OUTS” a payment of \$71,869.42 for back taxes); see also JX 305 (Joint Stipulations of Fact for Trial) at ¶¶ 3-4 (under the terms of its lease, Eastern Minerals was responsible for paying Cane’s property taxes and did pay Cane’s property taxes from 1979 through tax year 1986).

Mr. Swafford believed that some timber cutting occurred on the Main Tract and the Grape Knob Tract after Cane’s acquisition of the property. Tr. at 99:2-16. He testified that the individual who performed the timber cuts was not a forester and did not cut in a “professional pattern,” but rather “skipp[ed] around here and there and [on] different tracts.” Id. at 50:24-51:14. In Mr. Swafford’s opinion, timber cutting on the Cane property “was an unproductive thing to do . . . [because] it [took] away from the value of the property more than . . . [it brought] benefits.” Id. at 52:22-24. On several different occasions, Mr. Swafford informed Citibank, Cane’s asset manager, that he believed that the timber cutting reduced the value of the property. See id. at 52:24-53:3.

Mr. Swafford testified that “[a]s the [permitting of the] mining became . . . uncertain[] [on the Cane property], . . . [he] began to look after the property more . . . [even though] at that time Citibank managed the property for . . . the owner.” Id. at 50:18-23. Not until the mid 1980s was Mr. Swafford formally “employed” on Cane’s behalf, see id. at 54:2-4; prior to that time and with the knowledge of Messrs. Wyatt and Bernos, id. at 56:5-9, however, Mr. Swafford corresponded with Citibank, Cane’s asset manager, as he “look[ed] after the property,” id. at 55:18-56:1; see also id. at 96:1-7. Citibank briefly retained Mr. Swafford to work as Cane’s local land manager. Id. at 95:13-96:10. In 1992, Cane directly hired Mr. Swafford as its property manager, id. at 94:20-22, a position that he continues to hold, id. at 94:23-25.⁶

Mr. Swafford testified that once employed by Cane as “their local agent,” his responsibilities included

looking after the[] assets, . . . [addressing] boundary line disputes, trying to control some of the traffic on the roads . . . [by] put[ting] signs on the property to show that the property--not offensive signs saying no trespass and keep out, but [that] the property is managed by Ronald H. Swafford . . . to try to slow down the arson, [and to] try to slow down the encroachments on the . . . properties.

Id. at 57:13-22.

⁶Cane’s current owner is Merrimac Corp. of which Louis Arovas is president. See id. at 56:18-23; see also <http://www.merricorp.com/> (visited October 20, 2005).

Before Mr. Swafford was hired as Cane's property manager in 1992, Citibank, as Cane's asset manager, sought his opinion regarding potential uses for the Cane property. Id. at 103:12-15. By letter dated October 27, 1984, to Robert Karogosian of Citibank,⁷ Mr. Swafford stated that

the main tract, containing approximately 8,000 acres, has a very good potential for development. There are possibilities for a lake site in the center of this property which could cover several hundred acres and would greatly benefit development purposes. This tract also has good road frontage on both paved and gravel roads and could be divided into mini-farms

DX 252 (letter of 10/27/84 from Swafford to Robert Karogosian of Citibank).

Nearly four years later, by letter dated September 27, 1988, to Rick Gamba of Citibank, Mr. Swafford "outlined[, at Citibank's request,]. . . several general options for marketing Cane Company Properties in Bledsoe County, Tennessee," specifically proposing:

OPTION 1

_____ The 7,000 acre tract could be sold as a whole, and the unattached tracts sold individually. It is my opinion that the average market value would be within a range of \$200 to \$250 per acre, and the properties could be marketed over a two year period. There would be some surveying cost involved.

OPTION 2

_____ This would involve the subdivision of the larger tracts into marketable tracts containing 100 to 500 acres each. The size of the tract would depend upon road frontage and topography. In my opinion, tracts so subdivided would have a market value of \$250 to \$300 per acre. This option would entail substantial surveying and some road construction. The property could be marketed over a two to four year period.

⁷The record contains correspondence referring to the same individual as "Bob" Karagosien and "Robert" Karagosian. Compare DX 252 with DX 256. For consistency, the court refers to Robert Karagosian.

OPTION 3

_____ In my view, the 7,000 acre tract would be ideal for a large scale development including lake(s), a community lodge, and possibly a golf course(s). The 7,000 acre tract adjoins Fall Creek Falls State Park. This park consists of approximately 16,000 acres, including a golf course, lakes, lodging, dining and other recreational activities, plus hunting preserves. It is visited by in excess of one million visitors each year. It includes the highest water falls in the Southeastern United States.

Should this type of development be envisioned, preliminary studies should be made by professional marketers with experience in marketing this type of development. If the large tract is developed, the outlying tracts should be retained because I would anticipate a substantial increase in their market value because of their proximity to the development. In my opinion, this option has the greatest potential, and obviously would substantially enhance the per acre value of the property although development costs would be substantial.

DX 254 (letter of 9/27/88 from Swafford to Richard Gamba of Citibank); see also Tr. at 106-109 (Swafford testifying about his proposed marketing options for Cane). Mr. Swafford observed in his letter to Mr. Gamba that Options 1 and 2 “would not necessarily be inconsistent with a mineral operation” but that Option 3 “would be inconsistent with any type of large scale mining operation in the area of the development.” DX 254 (letter of 9/27/88 from Swafford to Richard Gamba of Citibank) at C02713.

Subsequently, by letter dated January 20, 1992 to Robert Karagosian of Citibank, and prior to his retention by Cane as its property manager, see Tr. at 114:14-19, Mr. Swafford addressed several of his concerns about the Cane property. Of particular interest to the court is the opinion Mr. Swafford expressed that “the most realistic means of generating funds for maintaining the [Cane] property is to sell off the small parcels . . . not attached to the [M]ain [T]ract.” DX 256 (letter of 1/20/92 from Swafford to Robert Karagosian of Citibank).

Mr. Swafford also demonstrated interest in the Cane property as a prospective purchaser for his own account. In his letter dated January 20, 1992 to Robert Karagosian, he wrote:

As I had mentioned to you in a previous telephone conversation, should the decision be made to liquidate the entire property, I would personally offer

the following proposal: \$110 per acre, subject to two stipulations - 1. A survey be furnished by Seller in order to determine exact acreage. 2. Fee Simple title with title insurance policy furnished by Seller. Possible financing could be negotiated.

Id. at C02639-40.

Less than six months later, by letter dated May 15, 1992 to Peter Zaslowe of Integron Corporation, Cane's asset manager at the time,⁸ Mr. Swafford again offered his opinion regarding options for producing income from the Cane property. Tr. at 109:18-110:2. He specifically recommended "that the best way to generate . . . revenues and at the same time . . . protect the biggest portion of th[e] [Cane] property would be to sell off some of the out parcels" and hold "the large tract which joins Fall Creek Falls State Park . . . intact" for marketing as a whole parcel. DX 257 (letter of 5/15/92 from Swafford to Peter Zaslowe of Integron Corporation) at C02715.

In 1995, Mr. Swafford entered into a joint venture with plaintiffs in this case, Cane and Colten, named Cane/Colten-Swafford Joint Venture (CCS Joint Venture or Joint Venture). Id. at 146:22-25; JX 303 (color map demarcating Cane property as of June 2000 and Cane property sold before June 2000); DX 267 (Restated Joint Venture Agreement). The Joint Venture has developed the acreage conveyed to it by Cane and Colten into a residential development called Gardner Place.⁹ See Tr. at 47:24-48:1; DX 266 (Warranty Deed from Cane/Colten to the Joint Venture). Mr. Swafford's day-to-day responsibilities with respect to the joint venture include "market[ing] [and] . . . sell[ing]" tracts of land within the Gardener Place development as well as "do[ing] the on-the-ground work of day-to-day." Tr. at 149:22-150:12. Mr. Swafford usually sells the tracts in parcels of five acres or more. Id. at 150:14-16. The deeds contain timber cutting restrictions to protect the "aesthetics" of the properties. Id. at 153:20-154:9. The Joint Venture's website posts appraised prices for the tracts ranging from \$5000 to \$10,000 per acre. See DX 240 (tract information found on the Gardner Place website at <http://www.gardnerplace.com/>); Tr. at 150-152 (Swafford). Between June 6, 1996, the date of the Joint Venture's first sale, and October 25, 2004, the date of the last sale indicated in the sales log of the Joint Venture, the Joint Venture sold approximately

⁸Integron continues to be Cane's asset manager. See Tr. at 109:22-23 (Swafford stating that "Integron Corporation is the . . . manager of Cane").

⁹Under the terms of the Restated Joint Venture Agreement, Cane conveyed 546.13 acres to the Joint Venture and Colten conveyed 1,754.12 acres. See JX 305 (Joint Stipulations of Fact for Trial), ¶ 7.

eighty-three percent of its acreage. DX 241 (Joint Venture Sales Log); Tr. at 160:8-18 (Swafford). Mr. Swafford testified that he and his wife bought one of the Gardner Place tracts, built a house on the land, and then resold the property. Id. at 160:25-161:9. As reflected in the Joint Venture Sales Log, see DX 241, the average price per acre is \$1,295, Tr. at 160:10-12. The total distribution to Cane since the inception of the Joint Venture is \$43,923.08. JX 305 (Joint Stipulations of Fact for Trial) at ¶ 12. Of the 89 tract sales in Gardner Place, see DX 241 (Joint Venture Sales Log), eight to ten of the sales have been resales, Tr. at 153:4–16 (Swafford).

The court qualified Mr. Swafford “as an expert on the real estate market in Bledsoe County in June of 2000 and [on] the value of the Cane tracts.” Id. at 59:10-13; see also PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black) (containing Swafford’s opinions regarding the value of Cane’s property). He testified that his “opinion has basically always been that [cutting timber on the Cane property] takes away from the value of the land more than you can receive out of the timber” because Cane’s land itself has value worth protecting. Tr. at 111:23-112:3; see also DX 256 (letter of 1/20/92 from Swafford to Robert Karagosian of Citibank) at C02639 (Swafford expressing his “strong opinion that another timber cutting operation should not be considered” as a means of generating funds from the Cane property and that he has opposed timber cutting “over the years”). He added that the operating expenses for the property during timber harvesting adversely affect the marketability of the Cane tracts as timberland. See id. at 83:1-25; PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black) at 18.

Mr. Swafford described the physical characteristics and distinctive features of the Cane property at trial. See generally Tr. at 59-68. “The [Cane] property is a rural property adjacent to [the undeveloped area in the] Fall Creek Falls [State Park].” Id. at 59:25-60:2 (Swafford). Cane shares a “[c]ommon boundary with the park,” but no direct road access exists between Cane and the park. Id. at 60:3–4, 12-15 (Swafford). Mr. Swafford explained:

The property in its nature is referred to [by] the local[s] . . . [in the] area[] as company land That[] [term] refer[s] basically to property that nobody looks after, nobody lives on, we can hunt on it, we can use it. There’s -- as I say the CC¹⁰ road that runs through the property is one of the few roads in these rural areas that is very hard to access by -- I mean

¹⁰The parties refer to the unpaved road crossing Cane Creek and the Main Tract as “the CC road.”

that by a two-wheel drive vehicle or a car, but, yet, for instance the police do not patrol. There's no houses out there, but [the public] can access it . . . and the property owners cannot make them get off because they can tell you very quick like, and rightly so, it's a county road. They can go anywhere they want to. Once they do, it's very easy to get off that road once they get into the property. It's very hard to patrol. It's hard to manage. It's a place to go get away, to grow marijuana. A lot of marijuana's grown in that area.

Id. at 60:22-61:13 (footnote added). The community's perception that the Cane property is "company land" or public property predates Cane's ownership of the property and has persisted for "a long time." Id. at 61:16-21; 62:11-16 (Swafford).

Mr. Swafford testified that the long-standing perception of the property as public land has limited Cane's ability to use the property for recreational purposes. He recounted that, in response to Mr. Wyatt's efforts in the late 1960s "to try to stop the hunting or slow the hunting down to try to control it," id. at 64:16-17; 66:8-10 (Swafford), persons from the community "got mad at him, set fires up and down the CC road . . . trying to burn him out," id. at 64:17-19 (Swafford). The "fire damage . . . went through the pines" that Mr. Wyatt had planted along the CC road. Id. at 64:22-23; 65:17-21 (Swafford). While conceding that his "knowledge is limited" on the subject, Mr. Swafford opined that public access to the Cane property "absolutely" has an impact on Cane's ability to lease its property for hunting because "when you lease an area to hunt you have to control access some way because you're bringing people inside that pay a fee to come in and hunt." Id. at 67:2-10.

Mr. Swafford's testimony also addressed a box cut that Eastern Minerals, Cane's lessee, dug on Cane's Main Tract in the mid 1970s. Id. at 162:13-25. The box cut is an "open pit on the property." DX 256 (letter of 1/20/92 from Swafford to Robert Karagosian of Citibank) at C02639; see also Wyatt, 271 F.3d at 1094 (noting that Cane's lessee, Eastern Minerals "executed a box cut on the [Cane] property to extract coal from [a particular] coal seam, and also constructed various 'improvements' to the land, including a sediment pond, a backfill area, and various roads"). Cane has owned the property at all times since the box cut was dug. Tr. at 163:7-9. As expressed at trial, it is Mr. Swafford's opinion that the existence of the box cut would be an issue for potential buyers of the Cane property because "the locals us[e] it, kids swim[] in it, [and folks] dump[] . . . cars, debris [in it]." Id. at 174:3-9. Mr. Swafford also testified that, based on his conversations with Tim Eagle, an employee with the Tennessee Department of Environment and Conservation, see id. at 176:17-25 (Swafford); id. at 590:2-8 (Siddell), there is a possibility that the government would require reclamation of the box cut under

SMCRA and that possibility would influence potential buyers as of June 2000, id. at 174:10-13. However, when asked by defendant's counsel about the basis for his opinion about the risk of a possible federal requirement of reclamation, Mr. Swafford testified that he has never applied for a permit under the Surface Mining Control and Reclamation Act, does not know of any active mining permits on any of the Cane property, and does not know of any enforcement actions ever brought by the Office of Surface Mining against Cane with respect to the box cut on Cane's Main Tract.¹¹ Id. at 163:24-164:7.

¹¹Mr. Swafford did not appear to distinguish between the federal and the state regulatory schemes when discussing possible reclamation liability under the federal statute SMCRA. The distinction is important because although the State of Tennessee formerly had primacy to administer a mining program in Tennessee that had been approved by the Office of Surface Mining, the State of Tennessee lost its enforcement authority under SMCRA on October 1, 1984 when the Office of Surface Mining withdrew its approval of the Tennessee regulatory program. See Surface Coal Mining and Reclamation Operations Under a Federal Program for Tennessee, 49 Fed. Reg. 38874, (Oct. 1, 1984); Rith Energy v. United States, 247 F.3d 1355, 1359 (Fed. Cir. 2001) ("Prior to April 1984, the State of Tennessee had administered SMCRA in [the Cumberland Plateau region of Tennessee]. In the wake of failures by the State to implement, administer, maintain and enforce the state program adequately, OSM took over the administration of SMCRA in Tennessee[, and] promulgated a federal program for Tennessee in October 1984."); Cane Tennessee, Inc. v. United States, 63 Fed. Cl. 715, 729 n.14 ("Until 1982, Tennessee administered [SMCRA] under federal provisions. In August 1982, Tennessee received conditional approval of a permanent regulatory program. In 1984, the Interior Department's Office of Surface Mining assumed direct federal enforcement of Tennessee's program.").

Moreover, Mr. Swafford's concern that the government might require reclamation of the box cut under SMCRA appears to be based, not on the statute or case law, but instead on his perception that reclamation liability attaches to the land rather than to the permit authorizing surface coal mining operations. The text of SMCRA, however, indicates that reclamation liability rests with the permittee. SMCRA prohibits "any surface coal mining operations unless such [prospective operator] has first obtained a permit issued by such State pursuant to an approved State program or by the Secretary pursuant to a Federal program." 30 U.S.C. § 1256(a). A permit applicant must "submit to the regulatory authority as part of the permit application a reclamation plan." 30 U.S.C. § 1257(d). The "reclamation plan submitted as part of a permit application pursuant to any approved State program or a Federal program . . . shall . . . , in the degree of detail necessary[,], . . . demonstrate that reclamation required by the State or Federal program can be accomplished." 30 U.S.C. § 1258(a). "No permit . . . application shall be approved unless the application affirmatively demonstrates and the regulatory authority finds in writing on the basis of the information set forth in the application . . . that . . . the applicant has demonstrated that reclamation as required by . . . the State or Federal program can be accomplished under the reclamation plan contained in the permit application." 30 U.S.C. §

With respect to the valuation of timber on the Cane property, Mr. Swafford opined that stumpage value is not an accurate measure of market value. He testified that “[o]ver the years of [his] business and dealing with individuals that have sold property, looking at stumpage reports, it is consistent, in [his] opinion, that they are much higher than what the landowner would actually receive.” Tr. at 69:17-21. As an illustration of his point, Mr. Swafford testified regarding his experience with a property located on the Cumberland Plateau in Van Buren County known as the Crow Creek property, also referred to as the Bouldin Tract. See id. at 69:22-70:12; PX 122 (Appraisal prepared by Ronald H. Swafford Appraisal Services) at C05223. He testified that he believed that the owner of the Bouldin Tract, a timber company, was managing the property for timber and that the timber on that property was “excellent quality.” Id. at 73:16-74:5. In October 1999, Mr. Swafford appraised that property at \$2,160,000 dollars or approximately \$500 per acre, id. at 74:13-19. He used a comparable sales approach in his appraisal. Id. at 137:15-17. The comparable sales approach included a review of a variety of property sales, the selection of nine sales for comparison (giving most weight to five of the sales), and adjustments for factors such as property location, size, and terrain, to determine the market value of the property. See generally id. at 137:15-145:22. Mr. Swafford testified that, while the stumpage valuation “was a little over a thousand an acre,” the actual selling price of that property was \$450 an acre. Id. at 75:9-11. The appraised property consisted of 4,319 acres. Id. at 130:6-8; DX 205 (A Forestry [Report] and Appraisal and A Review of Report by Sizemore & Sizemore Incorporated prepared in 2002 by Michael Black and Ronald Swafford) at 17.

After defining the term “appraisal” to mean an “estimation of value . . . generally market value” of property as of a particular date and time, id. at 119:12-25; 120:5 (Swafford describing an appraisal as “an opinion”), Mr. Swafford acknowledged that he had not conducted an appraisal of the Cane Main Tract, the Rainey Ridge Tract, the Higgenbotham Tract, or the Grape Knob Tract as of June 2000, id. at 120:12-21. Nor had he made a determination of the highest and best use of the Cane property as of June 2000, id. at 121:10-12, a predicate determination required for an appraisal of the property, see id. at 121:6-9, 13-16. Nonetheless, Mr. Swafford opined that, as of June 2000, “a rational buyer would not purchase the Cane property . . . for purposes of timber management and harvesting because that would be an economically-losing proposition.” Id. at 93:17-20. Moreover, based on the considerations that he would take into account as a loan committee member with the local bank, particularly with respect to potential risk associated with the box cut on the Cane property, Mr. Swafford testified that “there

would not be a market [for the Cane property] in June of 2000.” Id. at 93:23-94:11.

In these circumstances, Mr. Swafford’s testimony that “there would not be a market [for the Cane property] in June 2000” is entitled to little or no weight. Mr. Swafford failed to support his opinion of value with any objective method of valuation. See 50 Acres of Land, 469 U.S. at 35 (requiring “objective valuation standards” when evaluating takings claims). He neither appraised the Cane property himself nor explained in any convincing manner the reasonableness of the assumptions for his opinion of market value (that “there would not be a market”) for the Cane property. Moreover, when asked by defendant’s counsel whether, based on his almost thirty years of experience in the real estate business in Bledsoe County, Cane’s property “[comprised of] 8600 acres of land, almost 6,000 of which abut[.]s Fall Creek Falls State Park, . . . ha[d] some value [as of June 2000],” Mr. Swafford replied, “Yes,” in an apparent contradiction to his testimony that “there would not be a market.” Id. at 192:2-16. In fact, Mr. Swafford’s most convincing testimony on value emerged when, as a fact witness, he acknowledged that he had expressed an interest in 1992 in purchasing the Cane property and had written to the owner to propose a deal. Tr. at 124:10-125:16 (Swafford); see DX 256 (letter of 1/20/92 from Swafford to Robert Karagosian of Citibank) at C03639-40 (proposing to offer “\$110 per acre” for the Cane property “should the decision be made to liquidate the entire property”). The fact that Mr. Swafford himself subsequently purchased a parcel of land in Gardner Place, the residential community developed out of certain Cane property deeded to the 1995 Joint Venture between Mr. Swafford and Cane/Colten, further supports the court’s view that Mr. Swafford’s testimony that “there would not be a market [for the Cane property] in June 2000,” Tr. at 94:11, should not be credited.¹²

¹²Mr. Swafford’s testimony and the documentary evidence at trial indicated that during the course of his long-standing association with the Cane property, Mr. Swafford consistently disapproved of and discouraged timber harvesting on the property. See Tr. at 52:24-53:3, 109:18-110:2; DX 252 (letter of 10/27/84 from Swafford to Robert Karagosian of Citibank) (stating that the main tract “has a very good potential for development”); DX 254 (letter of 9/27/88 from Swafford to Richard Gamba of Citibank) at C02713 (outlining three options for the development of the Cane property); DX 256 (letter of 1/20/92 from Swafford to Robert Karagosian of Citibank) at C02639 (Swafford expressing his “strong opinion that another timber cutting operation should not be considered” as a means of generating funds from the Cane property and that he has opposed timber cutting “over the years”); DX 257 (letter of 5/15/92 from Swafford to Peter Zaslowe of Integron Corporation) at C02715 (recommending, for the generation of income, the sale of the outlying Cane parcels and the retention of the “large tract” for marketing as a whole parcel). Instead, he recommended and, in fact, pursued the development of the property for residential use. See DX 241 (Joint Venture Sales Log); DX 256 (letter of 1/20/92 from Swafford to Robert Karagosian of Citibank) at C03639-40 (proposing to

The court also heard testimony from plaintiff's expert Michael Black, a forester specializing in land management and wildlife habitat management. Tr. at 194:8, 197:7-8. Since October 2004, Mr. Black has worked "at Arnold Air Force Base in Tullahoma, Tennessee as a restoration ecologist." Id. at 194:12-17. His responsibilities include "manag[ing] the 40,000 acre base for forestry and wildlife habitat[,] particularly for rare, endangered species." Id. at 205:17-20.

For a period of ten years prior to his employment with Arnold Air Force Base, Mr. Black owned his own private consulting business in forestry and wildlife management. Id. at 194:18-24. He still conducts that business as Sequatchie Forest and Wildlife, id. at 194:25-195:2, performing "traditional forestry consulting work" which includes conducting timber appraisals and managing timber sales, id. at 203:4-5, 11-13, and specializing in forest management that integrates wildlife habitat development with recreation or hunting uses, id. at 203:7-10; 204:1-11. Mr. Black manages "a hunting lease program on [three tracts of nearly 13,800 acres of] timberland . . . [on] the Cumberland Plateau." Id. at 344:24-345:5; see also id. at 346:19-348:4 (Black stating that the first parcel "is private land of . . . 5,200 acres," the second parcel "is industrial forest land . . . [of] 8,552 acres," and the third parcel "was 2,431 [acres] but they have [sold off] a little bit").

Prior to opening his consulting business, Mr. Black worked at Bowater Incorporated, a pine management company. See Tr. at 197:12; 199:5-7; PX 117 (Black's Curriculum Vitae). At Bowater, he "[o]versaw the management of company lands including harvesting, site preparation activities, tree planting activities[,] . . . [f]ire suppression, boundary marking[, and] . . . the acquisition and sale of company lands." Tr. at 198:16-19. His responsibilities at Bowater also included "procur[ing] timber off the open market from private landowners . . . directly for the [company's paper] mill." Id. at 198:14-16.

Mr. Black is a hunter education instructor with the Tennessee Wildlife Resources Agency, id. at 196:5-6; PX 117 (Black's Curriculum Vitae) at C03546, and currently chairs the State Forestry Commission, a seven-member panel whose members are appointed by the Governor of Tennessee for five-year terms to oversee the state forestry budget and provide forest guidance to the legislature and governor's office, Tr. at 196:8-

offer "\$110 per acre" for the Cane property "should the decision be made to liquidate the entire property"); DX 267 (Restated Joint Venture Agreement). Plaintiff did not explore that approach to value in testimony, possibly because of concern that the approach could have revealed another "economically beneficial use[]" of [the] land." Tahoe-Sierra, 535 U.S. at 330 (quoting Lucas, 505 U.S. at 1019).

14; see also PX 117 (Black's Curriculum Vitae). The court qualified Mr. Black "as an expert in forestry and forest management including the valuation of timber and products derived from it as well as wildlife management, conservation, restoration and hunting lease management." Tr. at 209:4-8; see also PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black) (containing Black's opinions regarding Cane's valuation); DX 205 (A Forestry [Report] and Appraisal and A Review of Report by Sizemore & Sizemore Incorporated prepared in 2002 by Michael Black and Ronald Swafford).

Mr. Black stated that he first became familiar with the Cane property through his work at Bowater. He testified that "[a] major portion of . . . [his] work at Bowater . . . [involved] wildland fire suppression," in particular, addressing "significant arson problems on the Cumberland Plateau" where the Cane property is located. Tr. at 209:16-19. He stated that arson is a problem on the Cane tracts because "[a]ny [effort by absentee landowners to exercise] control over the public's ability to access the property for any purpose was not . . . and still is not [acceptable to] many individuals." Id. at 212:25-213:18.

Mr. Black testified that, in the summer of 2000, Mr. Swafford contacted him regarding the Southern Pine Beetle outbreak on the Cane property. Tr. at 213:25-214:13. Mr. Black met with Mr. Swafford and then made a ground inspection of the property "in the fall or early winter of 200[0]." Id. at 214:8-22, 215:17-24 (Black). After his initial visit to the property, he conducted an "aerial observation" by plane "to delineate the extent of the outbreak." Id. at 217:21-218:15. Mr. Black testified that he had dealt previously with Southern Pine Beetles, which are "a frequent pest," are "always in pine stands," and become "epidemic with drought and warm winters." Id. at 216:9-12.

Mr. Black testified at some length about the impact of the Southern Pine Beetle on the Cane property. He stated that, during his inspection of the Cane property, "[he] saw small scattered outbreaks where there were dead trees in the middle [of the tree stands] that had been infested for a little while, and then you'd move out, there were dying trees and fresh green trees that were infested. Beyond that, it was very classic symptoms." Id. at 216:14-18 (Black); see also PX 107 and PX 108 (aerial photographs taken during winter of 2000-2001 showing beetle infestation on Cane property).¹³ Signs or symptoms of Southern Pine Beetle infestation include "[d]ead and dying trees, and kind of the ring effect. . . . [T]here's a progression of death with the prevailing wind in

¹³The detection of Southern Pine Beetle infestation from photographs is "easier in the winter because the pine is the only green vegetation, so it's easier to pick up those brown spots within that vegetation." Tr. at 223:10-15 (Black).

most cases. By the time you see symptoms in a tree and the needles turn colors, those beetles have moved on . . . and are attacking fresh live trees beyond that point.” Tr. at 217:13-20 (Black).

Mr. Black testified that the Southern Pine Beetle, which is “about the size of a grain of rice, . . . kills . . . trees by burrowing into the bark and girdling the cambium layer which is the live layer of the tree. . . . When enough beetles [reach] . . . the cambium layer, that [beetle infestation] stops not only the flow of water from the roots but [also the flow of] nutrients from photosynthesis in[to] the [pine] needles.” Id. at 216:24-217:6. Mr. Black stated that the beetles “only attack green living pines primarily in the Southern Yellow Pine species group which includes . . . Lob Lolly[,], [S]hort [L]eaf, [and] Virginia [P]ine.” Id. at 216:21-23. The infestation spreads from tree to tree as the beetles “lay eggs, [the eggs] hatch, [and the hatched beetles] blow with the prevailing wind.” Id. at 217:8-9 (Black).

Mr. Black testified that, after inspecting the Cane property in the fall or early winter of 2000 to determine the extent of the Southern Pine Beetle infestation, id. at 215:17-24, he recommended to Mr. Swafford “early in 2001” that Cane conduct a salvage sale with the hope that the infestation “would not become a serious problem and [that] traditional harvest methods, cut and leave[,], and salvage methods would be able to stop the attack of the Southern Pine Beetle.” Id. at 226:13-227:2. Mr. Black stated that, although area foresters “knew the outbreak to the north and east on a statewide basis was severe . . . , [they] didn’t know how far it was going to progress to the west and south.” Id. at 226:15-19.

Cane accepted Mr. Black’s recommendation to conduct a salvage sale. Id. at 227:6-13 (Black). On Cane’s behalf, Mr. Swafford retained Mr. Black to handle the salvage sale of the timber located on the Cane property. Id. at 229:11-230:9 (Black); see also PX 154 (Landowner Service Agreement between Black and Swafford executed on March 9, 2001); JX 305 (Joint Stipulations of Fact for Trial), ¶ 14.

At trial, Mr. Black described how the salvage sale was conducted:

[W]e had a product that was changing daily[.] . . . [W]e had to delineate something on the ground in order to initiate a sale and bring p[ro]spective bidders, so we took what was current, activity spots, went around those with blue plastic flagging which is commonly used by forester[s] to mark timber sales boundaries . . . and those were offered for sale on the [M]ain [T]ract on what we referred to as three compartments. And for the purpose of this sale a compartment had no other meaning other than just an easy

physical breakup of the [M]ain [T]ract into three pieces. . . . [W]e contemplated [that] we may have two or perhaps up to three individual buyers, and that would keep the[m] working in different locations on the property and not adjacent to one another.

[The objective in marking the areas with blue flags was] [t]o salvage the dead and dying . . . timber and the buffers around those trying to recover any economic value of the timber before it was lost.

Tr. at 230:19-231:21.

Mr. Black also testified:

We did not do an inventory [of the timber on the property]. . . . [But,] most of the[] [potential] buyers were pine loggers themselves, so they were quite versed in what to expect in terms of tree height, stem break, they made their own observations.

. . . .

[To solicit interest in the sale,] I prepared what I refer to as a timber sale prospectus, . . . [which] ha[d] an invitation to bid page . . . [including] the basic who, what, when, why and how that a potential buyer would want to know about, and then I . . . provided a sample timber sale contract in advance so [potential buyers] would know the terms and conditions of the sale

Id. at 234:15, 235:14-24; see also PX 155 (Invitation to Bid prepared by Mr. Black in connection with Cane’s salvage timber sale).

Mr. Black described the interest of potential buyers in Cane’s harvested timber. He testified that he “mailed th[e] bid package to 78 potential buyers on or about June 15, 2001.” JX 305 (Joint Stipulations of Fact for Trial), ¶ 16. “The opening date for the bids received in response to the bid package was . . . July 10, 2001.” Id. ¶ 17. Mr. Black testified that “somewhere between six and ten [buyers submitted bids]. We had a fair number of . . . potential buyers on that sale.” Tr. at 327:23-328:4 (testifying that after the mailing of the bid packages, Cane received half a dozen bids on the timber Cane designated for harvest).

“The contracts for the three timber sales described in the bid package were awarded to Studer Management Services.” JX 305 (Joint Stipulations of Fact for Trial),

¶ 18. Mr. Black testified that Studer Management Services is “one of the largest producers of pulpwood and sawmill on the [Cumberland] plateau if not the largest,” and Mr. Studer’s reputation as a logger is “[o]utstanding.” Tr. at 242:5-12 (Black).

The timber sale contracts between Cane and Studer Management Services were executed on August 3, 2001. JX 305 (Joint Stipulations of Fact for Trial), ¶ 18; see also PX 150 (Timber Sale Contract Compartment No. 1); PX 151 (Timber Sale Contract Compartment No. 2); PX 152 (Timber Sale Contract Compartment No. 3). Mr. Black testified that the sale of Cane’s three compartments of salvage timber to Studer Management “was . . . a unit type sale of high quality timber stands that are in a stable environment.”¹⁴ Tr. at 237:4-6; see also PX 150 (Timber Sale Contract Compartment No. 1); PX 151 (Timber Sale Contract Compartment No. 2); PX 152 (Timber Sale Contract Compartment No. 3); PX 153 (Maps of the three timber compartments).

Mr. Black testified that the revenue from the timber salvage sale that he conducted between September 2001 and October 2003, see id. at 293:7-8, on approximately 1600 acres, or roughly one-fifth, of the Cane property was “about \$500,000,” id. at 299:2-10; see also PX 116 (aerial photographs delineating total cut acreage of approximately 1600 acres on the Cane property for the timber salvage sale); PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black), Table 2 at 1337 (Black’s discounted cash flow analysis indicating a timber revenue from Cane’s salvage sale of \$573,929). He stated that the expenses associated with Cane’s salvage sale were approximately \$368,000. Tr. at 300:4-6 (Black); see also PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black), Table 2 at 1337 (Black’s discounted cash flow analysis showing the expenses associated with the harvest to be \$368,861). Mr. Black testified that on an undiscounted basis, the net revenue from Cane’s timber salvage sale from 1600 acres of its property was approximately \$205,000. Tr. at 300:7-11 (Black).

Mr. Black testified that, “as a part of [the] timber sales contract requirements,” he

¹⁴As explained during the testimony of defendant’s expert Wayne Williams, a “unit” sale or “pay as cut” sale of timber involves a solicitation of bids from prospective buyers each of whom submit a per unit bid. See Tr. at 390:6-14 (Williams). The ownership of the timber transfers to the successful bidder after the timber is cut, removed and weighed at the delivery site. Id. at 390:10-13. The owner pays the seller “based on how much wood went across the scale.” Id. at 13-14. In this type of sale, the seller bears the risk of loss until the cut timber is delivered. See id. at 390:25-391:2. A “unit” sale is distinguishable from a stumpage sale where ownership of the timber, as well as the risk of loss, transfers to the buyer while the timber “is still standing . . . on a stump.” Id. at 390:22-25 (Williams).

included Tennessee Best Management Practices. Tr. at 243:15-21. He addressed the impact of the Best Management Practices on timber harvesting in Streamside Management Zones:

Best Management Practices [or BMPs] cover a whole host of spectrums from tree planting to site preparation, herbicide, other things. With respect to timber harvesting, most of the Best Management Practice guidelines are designed to prevent sedimentation in creeks and streams

. . . .

[With respect to timber harvesting near streamside management zones,]¹⁵ [t]here is a contention within the BMPs . . . that you can cut up to 50 percent of the canopy, it's not 50 percent of the trees but 50 percent of the canopy along a designated stream side management zone.¹⁶

Id. at 243:25-245:17 (footnotes added).

The Best Management Practice guidelines effectively discourage the clearing of timber “all the way down to the creeks . . . [in order] to preserve [the] water quality.” See id. at 257:19-258:9 (Black). Mr. Black testified that the Best Management Practices “[t]echnically . . . are voluntary guidelines,” but noted that the Tennessee Department of Environment and Conservation does enforce water quality standards. Id. at 259:2-8. Mr. Black also testified that, based on his experience, even if not barred by law, “[logging in streamside management zones on the Cumberland Plateau] is . . . not cost effective.” Id. at 246:2-6. He stated:

You can't take equipment in the stream[side] management zone, so if a logger is set up with a mechanical feller, they have to go in with a hand chainsaw, fell it, drag it out[,], make sure the tops are out of the stream course and takes more processing. It's often times in general not a cost effective practice. Where it is done very commonly is in West Tennessee with high quality White Oak, Cherry Bark Oak and Veneer timber on

¹⁵As explained during the testimony of defendant's expert Mr. Williams, a Streamside Management Zone is the “area along both sides of a creek or stream [in which zone] . . . forest management practices are regulated to various degrees to control sediment into the stream and water temperature.” Tr. at 428:25-429:3 (Williams).

¹⁶The amount of canopy that is permitted to be removed “depends on the slope of the land” and is defined in a table and chart on which foresters rely. Tr. at 245:18-20 (Black).

streams, but it's rarely done on the Cumberland Plateau.¹⁷

Id. at 246:6-15 (Black) (footnote added); see also PX 102 (photographs of mechanical equipment used by Studer Management Services for Cane's salvage timber harvest) at 999. Mr. Black estimated that, consistent with Best Management Practice guidelines and based on his "experience working on a lot of tracts, both industrial forestry lands and private tracts, [on a] typical plateau tract we would lose [or forego harvesting] ten to 20 percent of the acres in the stream side management zones." Id. at 262:25-263:4.

Mr. Black also described the type of timber generally found on the Cumberland Plateau:

[T]here were some . . . Lob Lolly pine . . . , and those were fairly high value stands . . . of certain sufficient diameter and form and species to be considered a high quality pine saw timber. . . . [B]ut the vast majority of the tract is what I would classify as a low grade hardwood timber type, the vast majority of that being pulpwood, it's pulpwood . . . due to small size.¹⁸ . . . [T]he hardwood on Cumberland Plateau is not known for quality. We have a lot of . . . species that are marginally commercially viable, and a lot of the timber has fire damage, . . . specifically on the Cane tract, and when [fire] burns into a hardwood stand, it won't affect the pine trees very much

¹⁷Referring to the one of the streamside management zones on the Cane property that the court visited with the parties the day before trial began, Mr. Black testified:

[O]n that site[,] the timber varied . . . but that was a typical site. We had Sourwood in the understory which was not commercially good We had a lot of Scarlet Oak . . . [that] was not large enough for saw timber . . . [but] goes in a product classification called tie logs which . . . [is used] for railroad tie construction.

Id. at 256:4-15.

¹⁸Mr. Black explained that "[a]nything below about 12 inches [in diameter], . . . [as] measure[d] four and a half feet above ground, will not be taken locally in this area for saw timber, so any tree under that 12 inch classification is pulpwood regardless of species." Tr. at 248:6-11. "When [a tree] becomes 12 inches [in diameter] . . . or above, then if it's a suitable species, and not all hardwood trees are, suitable form, straight, clear, then that timber, if it's sound[,] will be taken for saw lumber." Id. at 248:12-15 (Black). Mr. Black testified that "[a]nything under approximately five inches diameter breast height would be unmarketable" for any purpose. Id. at 264:23-24.

because they are tolerant of fire with thick bark, but [with] a hardwood, [fire] cooks that cambium layer and kills [in]side of the tree, and often times when you cut the tree down, at maturity it looks sound on the outside, but when you cut it down it's hollow because it has a heart rot fungus from a fire that occurred 30 or 40 years earlier, so [the Cumberland Plateau is] not an area known for high quality timber.

Tr. at 247:21-249:7.

With respect to the product uses of the timber found on the Cumberland Plateau, Mr. Black explained:

Pulpwood is a forest product that is typically made into some paper [I]t makes a light strong fiber used for paper towels, paper bags. Hardwood, when it's pulped has a short fiber . . . [and] makes a finer paper easier to write on. . . . Saw [timber] is a dimension lumber product . . . [that is] generally debarked, . . . [and] the bark [is] sold as mulch and then sewn into a cant which is a term to take the tapered tree into a straight, solid single board, and then that's further cut into boards. Pine is used for structural lumber, primarily for framing, . . . decking material and most treated wood is with pine. And then hardwood soft timber is used for furniture. . . . Saw timber generally [has higher value than pulpwood].

Id. at 249:11-250:20. With respect to the Cane tracts in particular, Mr. Black testified:

[As of June 2000, the Cane tracts had] [f]our different species of pine[:] . . . the two native species were Virginia pine and short leaf pine [and] . . . non[-]native [to the Cumberland Plateau] are white pine . . . and Lob Lolly Typically short leaf . . . is in the highest demand, and that was in limited quantities. . . . Lob Lolly would be second What was planted on the Cane tract is first generation, it's intermediate, not as valuable as the short leaf but still useful.

Id. at 250:21-252:2.

Mr. Black opined that significant stands of high quality pine wood on the Cane tracts "are non[-]existent [now] compared to what we had when we started in June of 2000." Id. at 253:9-12. His opinion that the hardwood on the Cane tracts is of poor quality is based on the poor timber species on the property, the "devastating impact" over time of fire damage on the hardwood, and the general shortness of the timber height on

the Cumberland Plateau due to the shallow, dry, acidic condition of the soil. Id. at 254:4-25 (Black).

Mr. Black testified about his professional experience with the stumpage method of timber valuation:

On small tracts [of land,] I've used extensively the stumpage method. On that type of evaluation you . . . inventory the property to determine the exact acres, take an inventory of species, products, grade, height and determine and estimate a volume generally of tons in pulpwood and thousand board feet in saw mill product. I use a system where I used known delivered prices. In Tennessee, they don't currently produce that, but the State of Tennessee produces a quarterly forest products bulletin which I relied on and many other consultants relied on heavily at the time of this valuation, and that lists delivered prices, and based on those delivered prices, that's what the logger would receive when they cut the timber off your land and took it to the mill. That is not what the landowner received. I translated that into stumpage prices because of my experience working with Bowater and private landowners, I had a very good knowledge base handling timber sales on what I could expect on certain type tracts as to what percentage a knowledgeable buyer would buy for those products, so I could take the delivery price and create stumpage from it.

Id. at 259:13-260:8. He defined "small tracts [of land]" as "[t]racts that can be sold entirely in one sale. In other words, an instantaneous transfer of revenue from [a] seller to a buyer." Id. at 260:13-15 (Black).

During his testimony, Mr. Black expressed reservations about using the stumpage method of valuation for a tract of Cane's size, stating:

[A] tract of this size in Tennessee on the Cumberland Plateau has almost historically . . . been a sale from one timber company to another or people in the timber industry, it's not a sale that typically takes place by people that are not in the timber industry or have some association with forest products.

. . . .

My concerns as a professional forester is that we can't possibly cut all that timber at one time, the market won't bear it, the mill won't stand that

influx of wood It's a concept but a concept that is not very realistic and does not take into account areas that have been mined or otherwise unreachable to harvest.

. . . .

[Even] if you had an army of producers, you physically cannot cut that much timber that quickly [Based on] my work, particularly on the Forestry Commission and this tract's immediate vicinity to Fall Creek Falls State Park, the environmental outcry would be staggering.

Id. at 261:3-262:11. He explained that generally pulp and paper mills prefer fresh wood and "[do not] want wood that's been on the ground for two or three weeks or cut and hauled and let sit in the yard for a long time." Tr. at 232:14-21 (Black).

In apparent conflict with his testimony that stumpage is appropriate for use with small tracts of land only, Mr. Black acknowledged that, "No, [3,800 acres is] not [considered a small tract]" when questioned by defendant's counsel about his use of the stumpage value method of timber valuation on a 3,800-acre tract of land in Van Buren County, Tennessee, a neighboring county to Bledsoe County where the Cane property is located. Id. at 331:15-25; see also PX 123 (Forest Inventory and Appraisal Summary dated October 1, 1999 for the Bouldin Tract in Van Buren County, Tennessee).

Mr. Black testified:

Stumpage is an estimate that is prepared for the value of standing and merchantable timber on a tract of land from a willing seller to a willing buyer, and it assumes that the timber will be transferred instantaneously. It's an estimate of what a landowner can receive on that timber. There is really no other process to obtain that. . . . [T]he only real way to determine what stumpage will actually bring is to put the timber on the market. Prior to that it's an estimate.

Tr. at 351:15-352:3. Mr. Black described stumpage, in the context of a timber management plan, as "a gross revenue estimate, not net revenue." Id. at 361:10-11.

Mr. Black stated that, in addition to providing an estimate of what a landowner can receive on a timber sale, stumpage provides a landowner with useful information in the development of a timber management plan for the property. Mr. Black testified that a timber management plan typically includes projections for a "ten-year time frame of planting." Id. at 260:16-17. Mr. Black testified that a timber management plan for

“nonindustrial private landowners” “put[s] together priorities for harvest, priorities for management and . . . provide[s] a landowner [with] a reasonable expectation of revenue over a very short period of time.” Id. at 278:10-14. In Mr. Black’s opinion, the stumpage method of timber valuation “is useful to estimate what will be brought in on [a] first sale” under a timber management plan for a property. Id. at 260:20-21 (Black). He explained that “[t]ypically the first sale [under a timber management plan] would involve an inventory and appraisal [of the standing timber],” and would inform the landowner’s timber management decisions regarding the planting of future stands. Id. at 278:14-16. A timber management plan also reflects “how the [projected] timber revenues would be offset by expenses for the landowner.” Id. at 278:16-19. Mr. Black opined that if proper projections are made at the outset, see id. at 280:21-25, a timber management plan is “a very effective method to determine the actual value of the timber,” id. at 278:19-21, after a ten-year period of time, see id. at 281:1-4.

During his testimony, Mr. Black discussed the factors he would consider in preparing a timber management plan for the Cane property. He expressed particular concern about preparing a timber management plan for the Cane property with “emphasis on the short-term stumpage from the higher value pine . . . because the costs are extremely high with a lot of risk and uncertainty about future markets.” Id. at 285:1-15; see also PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black) (containing Black’s opinions regarding Cane’s valuation). Nonetheless, he testified that he “would put all the emphasis on the pine timber [and not] the hardwood [which] is extremely low quality and slow growing.” Tr. at 286:3-5.

Mr. Black also stated that he “would be concerned about fire suppression efforts in those stands and the . . . occurrence [of fire].” Id. at 286:6-7. He testified that, to reduce the risk of fire after the timber harvest that he oversaw on the Cane property, Cane “conducted a process of slash disposal, [which involves disposing of the] by-products of the timber harvesting, . . . [specifically] the tops, limbs and brush.” Id. at 286:9-287:2. The actual slash disposal on the Cane property involved using a “root rake on the front of [a] dozer [to] put [the leftover debris] in rows . . . [and conducting] [c]ontrolled burns” in conformance with state-issued burn permits. Id. at 289:10-22; see also PX 102 (photographs of Cane property following salvage sale reflecting site conditions before and after slash disposal) at 1000-1001.

Although Mr. Black testified at some length about timber management planning, he stated that he had not, in fact, prepared an actual timber management plan for the Cane tracts, see id. at 281:5-9, and that he had made no attempt to value Cane’s timber in his second expert report, id. at 296:10-12; see also PX 158 (Review of Sizemore &

Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black) at 1332-36 (addressing timber management). He clarified that the discounted cash flow analysis that he included in his 2004 report reflected the investment value of the property to Cane, not market value, Tr. at 316:2-3 (stating that the discounted cash flow analysis “was a process to determine the feasibility of timber management on the Cane property”), and added that the report “was not intended to” show market value, id. at 316:1-7; PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black), Table 2 at 1337 (Black’s discounted cash flow analysis).

Mr. Black opined that, in June 2000, a purchase of the Cane property for timber management purposes “would [have] be[en] highly unlikely.” Id. at 275:5-276:2. He premised his opinion on two bases. First, as reflected in his initial expert report prepared in 2002, see generally DX 205, he had a “very strong opinion as a professional forester,” an opinion he acknowledged that he had formed before he did any timber sale work on the Cane property, that “the management of a tract th[e] size [of Cane] particularly for hardwood product alone was a very poor use of an investment.” Id. at 295:21-25. Second, as reflected in his “later report . . . co-authored with Mr. Swafford,” which included the discounted cash flow analysis that he performed for the Cane property, see generally PX 158, he determined that the purchase of the Cane property for “the management of hardwood pulpwood is not an economically viable timber investment.” Id. at 296:10-297:2; see also PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black), Table 2 (Black’s discounted cash flow analysis).

Mr. Black also opined that the Cane tracts “are not suitable for hunting licenses.” Tr. at 370:10-17. Based on his experience with hunting lease management, he testified that, “without control of the property” through the ability to limit access onto the Cane tracts, he could not conduct a deer management program for paying members when the public also enjoyed ready access to the property. Id. at 370:24-371:23 (Black).

On cross-examination and with his recollection refreshed, Mr. Black stated that he had expressed the opinion in his 2002 report that the market value of Cane’s timber as of June 2000 was “\$3,944,313.” Id. at 315:7-11; see also DX 205 (A Forestry [Report] and Appraisal and A Review of Report by Sizemore & Sizemore Incorporated prepared in 2002 by Michael Black and Ronald Swafford), Ex. E (Timber Appraisal Summary of Cane Property as of June 2000). He testified that his assignment in preparing the 2002 report “was to review the Sizemore & Sizemore report [prepared by defendant’s expert] and [to] prepare an inventory and appraisal of the Cane property.” Tr. at 330:6-10. As stated in Mr. Black’s 2002 report, “[t]he purpose of the [attached Forest Inventory and Appraisal Summary for the Cane Tennessee, Inc. property] is to estimate [as of June

2000] the market value of all merchantable and standing timber called stumpage . . . located on the Cane property.” Id. at 330:11-25 (Black); DX 205 (A Forestry [Report] and Appraisal and A Review of Report by Sizemore & Sizemore Incorporated prepared in 2002 by Michael Black and Ronald Swafford) at 14.

In preparing the 2002 report, Mr. Black inventoried Cane’s timber in 2001 and estimated the volume of pine trees that would have been present in June 2000 from his tally in 2001 of the pine trees that were dead or dying from Southern Pine Beetle. Tr. at 337:6-13. Although, in his opinion, the spread of the Southern Pine Beetle infestation was a “historic outbreak,” id. at 337:19-338:1, Mr. Black testified that he has made “[n]o” adjustments to the estimate of market value in his 2002 report in light of what he now knows about that infestation. Id. at 338:25-339:3.

Mr. Black also testified that he assessed the value of Cane’s timber in the streamside management zones in his 2002 report but did not include a separate assessment of value. Id. 340:6-16. In his 2004 report, however, he did not include an assessment of the value of the Cane’s timber in the streamside management zones. Id. at 342:13-19.

Mr. Black stated that the risk of arson on the Cane property was also “reflected in the stumpage rate as of June 2000.” Id. at 344:10-15. When asked by defendant’s counsel whether “endangered species concern[s] ha[d] [an] impact on the salvage operations [conducted on 1,600 acres of Cane’s property],” he stated, “No.” Id. at 349:23-25.

Mr. Black also testified about the sources for the figures which provide the bases for the discounted cash flow analysis in Table 2 of his 2004 report. He explained that he had provided only the figures for his professional fees and the revenue from Cane’s salvage timber sale and that Mr. Swafford had provided the other figures reflected in Table 2 of the 2004 report. Tr. at 316:15-317:8; PX 158 (Review of Sizemore & Sizemore Report prepared in 2004 by Ronald Swafford and Michael Black), Table 2 at 1337 (Black’s discounted cash flow analysis).

Mr. Black stated that he did not know whether Table 2 reflected Cane’s timber revenue of approximately \$117,000 derived from sales between 1982 and 1990, revenue about which Mr. Swafford had testified earlier in the trial, because “[t]hat was prior to [his] involvement with the property.” Tr. at 317:21-25. He testified that he did not know whether it was proper to have listed among Cane’s expenses in Table 2 the property taxes that Cane’s former lessee, Eastern Minerals, paid from 1979 to 1986, a fact to which the parties had stipulated. See JX 305 (Joint Stipulations of Fact for Trial),

¶¶ 3-4. Mr. Black explained, “I don’t know who the ownership was and where those [property tax figures] came from. Those figures were not provided by me.” Id. at 318:17-25. Mr. Black also testified that he did not select the eight percent discount rate applied in the analysis, id. at 319:1-7, did not know the difference between a nominal and a real discount rate, id. at 323:18-20, and did not know the difference between compounding and discounting, id. at 323:24-324:1. He explained that the mineral consulting firm of John T. Boyd Mining and Geological Consultants performed the discounted cash flow analysis contained in his 2004 report. Id. at 319:5-12 (Black); see also <http://www.jtboyd.com> (visited Oct. 24, 2005) (describing the business of John T. Boyd Mining and Geological Consultants). He stated that the discounted cash flow analysis was limited to the Cane Main Tract only, Tr. at 324:2-4, and that no separate analysis was performed for the other Cane tracts, id. at 324:9-325:9. He opined that an analysis of the other Cane tracts would have had “a net negative effect” on the analysis because “the timber volumes and values [of the other Cane tracts] were comparable [to the Main tract] and there [were] access issues with all three of those properties.” Id. at 365:25-366:3.

When the court surveys all the evidence provided by Mr. Black, the only quantitative opinion of the market value of Cane’s property as of June 2000 that appears in the record is Mr. Black’s 2002 timber stumpage valuation of \$3,944,313. Tr. at 315:7-11. The court notes that plaintiff challenged the court’s reliance on plaintiff’s own 2002 timber stumpage valuation provided by Mr. Black during summary judgment proceedings on the ground that the 2002 stumpage valuation had not been properly adjusted to reflect consideration of the Southern Pine Beetle infestation, Streamside Management Zones, and the costs associated with a timber sale. See Cane IV, 62 Fed. Cl. at 485-86 (opinion on plaintiff’s motion for reconsideration discussing bases for plaintiff’s motion). However, Mr. Black offered no revisions at trial to his 2002 stumpage valuation to reflect those considerations. Moreover, he made clear that his 2004 discounted cash flow analysis was intended to show only investment value, not market value. Tr. at 316:1-7 (Black).

Mr. Black’s opinion that the Cane property does not offer a sound investment for timber management purposes is not determinative of whether the Cane property had any market value as of June 2000. See Olson, 292 U.S. at 255 (market value of property not defined by its investment value). Indeed, his testimony and the documentary evidence indicating the number of bids submitted for Cane’s timber harvest sale in 2001 and the net revenue of \$205,000 from that sale on roughly one-fifth of the Cane property support a finding that, notwithstanding the fire damage to and the alleged poor quality of the timber on the Cumberland Plateau about which Mr. Black testified, the Cane tracts had some timber value as of June 2000.

The testimony of Mr. Swafford and Mr. Black failed to establish through objective methods of valuation that the Cane tracts had no market value as of June 2000. See Miller, 317 U.S. at 374 (defining market value as “what a willing buyer would pay in cash to a willing seller”); Servalli, 845 F.2d at 1575 (affording trial courts “considerable discretion” to consider different methods of valuation as appropriate in a particular case). Accordingly, upon the conclusion of Mr. Black’s testimony, the United States sought, by oral motion under Rule 52 of the Rules of the Court of Federal Claims (RCFC), judgment on partial findings of fact. See id. at 372:13-15; 374:5-7. The government declined to rest its case but requested “the option after the Court’s ruling [on the RCFC 52 motion] of putting on [its] witnesses.” Id. at 374:5-10. Unpersuaded that the interests of judicial economy would be best served by interrupting trial “with . . . this few witnesses [remaining to be heard and] with all the effort we took to get here” to consider a written motion by defendant and the responsive briefing thereto, id. at 373:10-17, the court denied the motion, id. at 374:11-17.

In support of its case, the government called two rebuttal witnesses on market value: Mr. Wayne Williams and Dr. Stephen Burak. Mr. Williams has been employed since July 1999 by Sizemore & Sizemore, Incorporated, a forest management and appraisal services firm in Tallahassee, Alabama, as second vice-president and forest management operations coordinator, id. at 377:20-378:2; 378:14-15, and is a registered forester in Alabama,¹⁹ id. at 375:20-376:7. Dr. Burak, who has served as the president of Sizemore & Sizemore since 1992, id. at 471:13-23, is “a professional forester, registered . . . in several states, [and] . . . also a certified general real estate appraiser in several states,” id. at 472:17-19. Dr. Burak is a “member of the Appraisal Institute and member of the Society of American Foresters,” id. at 472:20-21, and teaches timberland appraisal courses at several universities, id. at 484:7-14. The court qualified Mr. Williams as “an expert professional forester.” Id. at 381:13-15. The court qualified Dr. Burak as “an expert appraiser and forester.” Id. at 474:17-18.

Mr. Williams testified that he became familiar with the Cane property in December 2000 when the Department of Justice contacted his firm, Sizemore & Sizemore, requesting an inspection of the property “to see if there was sufficient timber volume and possibl[e] value to warrant a more intensive cruise.” Id. at 381:18-382:3. Mr. Williams conducted the initial inspection of the Cane property on May 10, 2001. Id. at 382:15-18. By letter dated May 16, 2001, Mr. Williams informed the Department of Justice that “[t]he pine stands contain about 20% mortality from [S]outhern [P]ine [B]eetle” and suggested “a cruise and timber appraisal of the standing timber on the

¹⁹Mr. Williams, who is not registered as a forester in any state other than Alabama, testified that the state of Tennessee requires “[n]o” registration of foresters. Tr. at 376:6-14.

subject property to better assess the timber volume and value.”²⁰ DX 203 (letter of 5/16/01 from Williams to Kristine Tardiff, Department of Justice) at 1; accord Tr. at 383:7-384:20.

Subsequently, during the period September 17-26, 2001, id. at 402:8-10, Mr. Williams conducted a cruise and appraisal of the standing timber on the Cane properties at the request of the Department of Justice, id. at 385:14-17. His analysis and the results from the intensive cruise on the Cane property are described in his report dated December 5, 2001. Id. at 385:22-386:2; DX 201 (A Timber Inventory and Valuation of Approximately 8,613 Acres of Timber Located in Bledsoe County, Tennessee, Owned By Cane Tennessee, Inc. prepared by Sizemore & Sizemore on 12/5/01) (2001 Sizemore & Sizemore Timber Valuation). Mr. Williams opined in the 2001 Sizemore & Sizemore Timber Valuation that the market value of the Cane tracts as of June 2000 was \$4,247,078, and that \$2,638,212 of that market value was attributable to the pine stands on the Cane property. Tr. at 393:11-14; 394:1-4; DX 201 (2001 Sizemore & Sizemore Timber Valuation) at 3, 5. His opinion of market value was based on the stumpage value of the Cane property. See Tr. at 386:3-6; 394:14-405:3.

Citing a number of professional reference materials, id. at 387:9-25, Mr. Williams defined “stumpage value” as “the value of the standing [uncut] timber as it is on the subject property.” Id. at 386:8-11. Although during his deposition Mr. Williams testified that a buyer would pay \$4.2 million dollars for the Cane property “if you could cut all the timber instantaneously and sell it all,” id. at 441:4-13, he testified at trial that the definition of stumpage that he had offered during his deposition “was not a very good definition for various reasons,” id. at 388:11-15. Having testified during his deposition that ““in appraisal work when you value [property] of [Cane’s] magnitude, the assumption is you can cut that timber in one day, in quotes, and dispose of all the timber and all the product at that point in time without restrictions to quota,”” id. at 440:16-20,

²⁰Mr. Williams explained the terms “timber cruise” and “timber inventory” as follows:

It’s a sampling method to estimate the total volume of timber on [a] subject property.

. . . .

[T]he intensity of a[] cruise is usually measured by the number of plots that are put into sample . . . [,] so, the more plots you put in, the more intensive the cruise is and the less plots you put in, the less extensive the cruise is.

Tr. at 385:1-13 (Williams).

Mr. Williams explained at trial that all of the timber on Cane's property could not be cut in one day, that no one would cut it in one day, and that the stumpage value contained in his report did not depend on someone's being able to cut all of Cane's timber in one day, id. at 388:16-24.

Mr. Williams described the method by which he determined the market value of the standing timber on Cane's property: "[F]irst we had to know what area we were sampling and . . . we were supplied maps and deeds from adjustors and [then] we produced some stand maps that told us how many acres of the different stand conditions were located on the Cane property." Id. at 394:22-395:1; see also DX 201 (2001 Sizemore & Sizemore Timber Valuation), Ex. 6 at 26-29 (stand maps of Cane property). Mr. Williams testified that, from the stand maps of the Cane property that Sizemore & Sizemore created which delineated the different timber types and the acreage of such timber types as well as the roads and creeks on the tracts, "we would know where we can take our plot data. . . . A plot is a sampling unit in forestry[;] it's just a subset of the total population of trees located on the subject property." Tr. at 395:24-396:7. After identifying the plot locations:

We would send out crews on the subject property and they would locate these sampling locations on the ground. And then they would collect the tree information. For this particular inventory we used a prism sampling method which is a piece of glass scientifically made so that when you spin it in a circle it will tell you which trees to collect the data on.

Id. at 396:10-16 (Williams). Sizemore & Sizemore identified nearly 1400 plot locations for the Cane properties and recorded the information collected from those plot locations on tally sheets. Id. at 396:22-24; 397:6-12 (Williams); DX 201 (2001 Sizemore & Sizemore Timber Valuation), Ex. 2 at 22 (example of tally sheet).

The crew members gathering the data were "all professional foresters," each of whom received from Mr. Williams a copy of written instructions concerning the field procedures for the timber inventory of the Cane property. Id. at 398:2-14 (Williams); DX 201 (2001 Sizemore & Sizemore Timber Valuation), Ex. 1 at 17-21 (Job Specifications for timber inventory of Cane property). Also, on each morning of the data collection, Mr. Williams instructed the crew on how to count pine trees affected by the Southern Pine Beetle:

[N]ote the dead, dying trees and . . . tally those trees on the tally sheet and put an X in one of the columns and . . . assess the dead, dying trees and if in their professional opinion [they] felt that that tree was alive in June of

2000, to tally that tree. And if it was not, to not tally the tree.

Tr. at 399:1-6. Also, when tallying the trees that had been affected by the Southern Pine Beetle infestation, the crew was instructed to make professional determinations about whether the trees were of sufficient size and quality to have been merchantable as of June 2000. See id. at 400:1-12.

To verify the accuracy of the data collected by the crew, Sizemore & Sizemore hired an Alabama consulting firm to conduct an audit cruise of Cane's timber. Id. at 400:13-16; 401:9-11 (Williams); see also DX 201 (2001 Sizemore & Sizemore Timber Valuation) at 9 (summary of audit cruise). The auditors conducted the cruise by randomly picking plot locations and "verify[ing] the data [reflected in the prepared tally sheets] through accurate measurement of the diameter and heights of the trees that were tallied and . . . comparing what the auditor found against what the cruiser tallied." Tr. at 400:15-24 (Williams). To assist the auditors, the plot locations were "all identified and established with flagging on trees . . . with . . . the plot center identified on the ground with flagging." Id. at 401:4-8 (Williams).

Sizemore & Sizemore entered the data from the audited tally sheets into a database file, corrected "abnormalities in product codes, diameters, heights, and other recording and keying errors" and "determine[d] the stand and stock tables and the growth information for the subject property." DX 201 (2001 Sizemore & Sizemore Timber Valuation) at 9-10 (summary of data compilations). Mr. Williams described how he determined what was on the Cane property as of June 2000 from the data collected during the 2001 Sizemore & Sizemore cruise of the Cane tracts:

During our cruise we took increment borings . . . in pine and in hard woods, in all product [and] diameter classes, and measured the last two years of growth, last six years of growth and last 11 years of growth which would give us information to estimate then the size of the trees in diameter two years, six years and 11 years in the past to match up with the three dates we were looking at, and we had to adjust the two year growth measurement, and I believe I adjusted it by .75 percent because we were actually only going back a year and a half roughly in the growth of the tree itself.

. . . .

[An increment boring is] a[n] instrument . . . foresters use[,] . . . sort of a hollow tube with teeth on the end and you screw it into the tree and you can extract a small pencil size core of the wood and from that you could

see the growth rings, the annual growth rings of the tree and you count those . . . in this case . . . to get the growth measurement for the last two, six and 11 years.

Tr. at 402:14-403:9; see also DX 201 (2001 Sizemore & Sizemore Timber Valuation), Table 9 at 14 (summary of Cane's timber volume by product type for June 2000, October 1995, and August 1990). Mr. Williams estimated the stumpage value for the total volume of timber on the Cane tracts as of June 2000 by multiplying the various timber volumes times a weighted average of the timber prices which were determined from: (1) the listed prices in two publications, one of which, Tennessee Forest Products Bulletin, also informed the stumpage estimate prepared by plaintiff's expert Mr. Black, see Tr. at 406:4-8; (2) personal discussions with other consultants about area timber sales data, id. at 405:23-25; and (3) direct inquiries of "wood utilization facilities to find out what kind of prices they were paying," id. at 405:25-406:3; see also id. at 406:9-407:1.

Mr. Williams reviewed the timber inventory and appraisal prepared by plaintiff's expert Mr. Black in 2002, compared the timber volumes and stumpage rates in Mr. Black's 2002 report with the values in the 2001 report prepared by Mr. Williams, and concluded that the reports "are very close." Id. at 407:5-408:9. Mr. Williams testified that, in round numbers, he estimated about \$700,000 more for pine than did Mr. Black, and Mr. Black estimated about \$500,000 more for hardwood than did Mr. Williams. Id. at 408:24- 409:3. He acknowledged, on cross-examination, that the valuation of the timber depends on the underlying assumptions of the estimator. Id. at 469:21-470:5.

Mr. Williams testified that, in 2004, he prepared another report to address four outstanding issues outlined in an October 2003 court order "that apparently had not been resolved in the first reports," specifically: (1) stumpage as a measure of market value, (2) the impact of the Southern Pine Beetle infestation on the stumpage price as of June 2000, (3) the volume and value of the timber in the Streamside Management Zones as of June 2000, and (4) the relationship between slash disposal costs and timber value as of June 2000. Id. at 409:16-410:13; see also DX 202 (A Supplement to the Timber Inventory and Valuation of December 5, 2001 on Approximately 8,613 Acres of Timber Located in Bledsoe County, Tennessee, Owned By Cane Tennessee, Inc. prepared by Sizemore & Sizemore on 1/31/04 and corrected on 4/4/05) (2004 Supplement Sizemore & Sizemore Report). Having addressed the issue of stumpage as a measure of market value earlier in his testimony, see Tr. at 385:22-388:24, Mr. Williams focused on the other three issues.

With respect to the Southern Pine Beetle infestation, Mr. Williams testified that, while the Southern Pine Beetle routinely appears in pine trees in the southeastern region of the country, Tr. at 411:24-412:2, the spread of the Southern Pine Beetle can be

controlled once its presence is detected, id. at 412:3-13; accord DX 212 (Texas Forest Service Circular 267, Integrated Pest Management Handbook: How to Conduct a Southern Pine Beetle Aerial Detection Survey). The “three best methods of control” are “salvage removal, cut and leave, [and] cut and burn.” Tr. at 416:15-20 (citing DX 222 (United States Department of Agriculture, Southern Pine Beetle Handbook: Direct Control Methods for the Southern Pine Beetle)). Salvage removal “as quickly as possible” in spots “with the greatest number of infested trees” is recommended. Tr. at 417:10-25 (Williams). And during the summer, “when the beetle spots are really beginning to spread because [it is] hot . . . [and] drier [than in the] winter months,” id. at 415:7-13, salvage removal should occur “no more than four weeks . . . between marking and treating” the affected trees, id. at 417:21-418:5; see also DX 222 (United States Department of Agriculture, Southern Pine Beetle Handbook: Direct Control Methods for the Southern Pine Beetle) at 5 (“Salvage removal is the preferred treatment” for areas “with the greatest number of SPB-infested trees. . . .”). “[I]f the trees are harvested and processed soon after attack, they can be used for a wide range of wood products” Tr. at 420:4-6 (Williams) (quoting DX 221 (United States Department of Agriculture, Southern Pine Beetle Handbook: A Guide for Using Beetle-Killed Southern Pine Based on Appearance) at 3). Mr. Williams testified that, in the time between detection of the Southern Pine Beetle in spring or summer of 2000 and the salvage removal in September 2001, “the property had gone through two peak . . . periods for Southern Pine Beetle,” and that “[i]f I were standing on the Cane [M]ain [T]ract [in June 2000] and had done an inventory of the property at that point in time, . . . I would [not] have been able to have foreseen the extent of the damage that was done . . . by the year 2001.” Tr. at 423:4-8; 424:3-7. When asked whether a willing and knowledgeable prospective buyer of the Cane property would have offered less than stumpage value for the property in June 2000 based on the Southern Pine Beetle infestation, he opined, “No.” Id. at 424:16-21.

With respect to Streamside Management Zones, Mr. Williams testified that neither Tennessee law nor the Best Management Practices prohibit logging or harvesting within a Streamside Management Zone “as long as . . . the water quality or temperature of the stream” is not adversely affected. Id. at 429:4-22. He further testified that, when preparing a timber inventory and appraisal for a client in the ordinary course of his professional work:

[W]e include the volume and value of the timber in SMZ[]s because it can be removed at some point in time.

. . . .

You can cut it at various times, you don’t have to cut it all at once or leave

it all at once, you can thin it, wait for the reproduction to come up and grow larger and then cut your larger trees.

Id. at 430:9-23 (Williams). To estimate the volume and value of timber within the SMZs on the Cane property, Mr. Williams stated:

We used topographic maps, aerial photography to . . . identify those streams that would require an SMZ, and we classified those and assessed the acreage within three SMZ widths.²¹ We took a minimum, a medium and a maximum width on all those streams and . . . made a determination of what we could log out of each . . . SMZ[] and applied stumpage rates to those to come up with a volume and value

Id. at 431:10-17 (footnote added); see also DX 202 (2004 Supplement Sizemore & Sizemore Report) at 12 (Table 2 indicating the timbered acreage within the SMZs for the three widths). Consistent with the Best Management Practices for a Streamside Management Zone of 290-foot width, Mr. Williams estimated that the value of the timber within the Cane's SMZs to be "[a]pproximately \$385,000." Tr. at 435:15-19; see also DX 202 (2004 Supplement Sizemore & Sizemore Report) at 15 (estimating the value of the timber that can be "realistically harvested" using the timber types, values and volumes found with Cane's SMZs and applying the rules for harvesting within SMZs). Mr. Williams acknowledged, however, that some of the timber within the SMZs would have to remain standing. Tr. at 444:1-22.

Factors affecting the likelihood of harvest of trees within a SMZ are the number and quality of trees found. Mr. Williams testified that a "large enough number of trees" would be necessary to induce a logger to take equipment onto the property to harvest trees within Cane's SMZs, id. at 458:13-20, and even larger volumes of timber would be required to induce a logger to harvest low-quality timber within SMZs, id. at 458:25-459:3. The quality of trees in a SMZ also affects the likelihood that a purchaser will expend the funds necessary to flag the trees for harvesting. Mr. Williams also testified that he did not flag the trees in the SMZs during his inventory because it would have been prohibitively expensive, id. at 462:11-21, and he agreed on re-cross that whether flagging is conducted for an inventory or some other purpose, like harvesting, the expense of flagging is the same, see id. at 469:11-16.

²¹To determine the various widths, Mr. Williams explained that "you measure horizontally from the side of a stream out, a minimum width is 25 feet." Tr. at 431:24-432:3.

With respect to slash disposal costs, Mr. Williams testified that such costs do not affect stumpage value “[b]ecause you’ve cut the timber down and whether you do anything with the logging residue is totally up to you. It doesn’t affect the stumpage value at all.” Tr. at 437:4-10. He noted, however, that the need for slash disposal “could” affect the value of the land, id. at 437:11-13 (Williams), and he explained that landowners undertake slash disposal “to protect . . . from arson[,] . . . for site prep . . . to plant another stand . . . or remove the debris so hardwoods could sprout better . . . [or] to clear that, so [the land] looks good for development purposes,” id. at 437:16-25 (Williams).

Mr. Williams’ testimony about the assumptions that he made and the method that he employed to determine Cane’s stumpage value appeared to the court to be “based upon sound principles.” Timberlands, 284 A.2d at 897 (discouraging reliance on expert testimony that does not have a “reasonable basis”). His testimony on cross-examination about certain factors that could affect the value of the property as of June 2000, in particular the Southern Pine Beetle infestation, slash disposal costs and the value of the timber within the Streamside Management Zones, identified the areas of possible variation in opinion based on the underlying assumptions of the estimator. His testimony at trial supported the conclusion that his method of determining Cane’s stumpage valuation was reasonable. The case law is clear that although stumpage is an “estimate” of fair market value, Peters, 694 F.2d at 689, it is generally an “appropriate measure of value,” Thomas Creek Lumber, 19 Cl. Ct. at 713. Even if adjusted downward to deduct the total estimated value of timber in the SMZ of \$385,000 and the total cost to plaintiff of slash removal, the stumpage value of the timber on plaintiff’s property as of June 2000 would, according to Mr. Williams 2002 Report, be approximately \$3,887,000. See DX 202 (2004 Supplemental Sizemore & Sizemore Report) at 15.

Defendant’s expert Dr. Burak offered an opinion of the fair market value of the Cane property in the amount of \$4,775,000. Tr. at 475:11-13; DX 204 (An Appraisal of 8,613 Acres of Timberland Known as the Cane Tennessee Property Located in Bledsoe County, Tennessee as of June 17, 2000 prepared by Sizemore & Sizemore on 1/31/04 and corrected on 4/15/05) (Sizemore & Sizemore Burak Appraisal) at i. Dr. Burak defined “[m]arket value [a]s a value . . . as of a specific point in time . . . [that] assumes . . . we have knowledgeable buyers and sellers[] in an open and competitive market.” Tr. at 477:19-22. Dr. Burak testified that his opinion of market value is “intended to comply with the Uniform[] Standard[s] of Professional Appraisal Practice” and, consistent with those standards, he certified that he “approached this [assignment] in a non[-]biased manner, without any regard to the parties involved, and that [his] compensation is not contingent on the values or the outcomes of any proceedings.” Tr. at 475:14-25.

Dr. Burak described the steps he took in appraising the Cane property following his inspection of the property on January 27, 2004:²²

I had a lot of information about the subject property to start with because our firm had done a timber cruise and . . . stumpage appraisal. And, so, I had some familiarity with the property at that point in time.

Id. at 476:5-9. He identified as a “[p]otential buyer for this property . . . a timberland investor, forest products company,” id. at 477:23-478:1, which “help[ed] define the market” for his analysis, id. at 477:25-478:9 (Burak). He performed a highest and best use analysis to determine that the best use for the Cane tracts is timber production.²³ Id. at 480:10-25 (Burak). Dr. Burak then used each of “[t]he three methods . . . recognized in appraisal [work],” specifically the cost approach, the sales comparison approach, and the income capitalization approach, to determine the fair market value of the Cane property. Id. at 481:22-482:7.

Dr. Burak testified:

[The] [s]ales comparison approach looks at packages - . . . [for] timberland apprais[als], [we’re] looking at packages of land and timber [W]e have this subject property . . . [which] has land and . . . timber on it, and we’re looking for other comparable sales that are land and timber in some combination. Once we select those sales, we then have to make some sort of comparison of those sales to the subject property. And the methodology that we use is to identify a unit of measure[.] [I]n this case it would be tons for timber and acres for land. . . . [After] identify[ing] these individual packages . . . of land and timber[, we] . . . extract from those basically the square footage numbers, dollars per ton for pulpwood or for pine soft timber, dollars for hardwood, pu[lp]wood saw timber as well as dollars per acre for the various land types. Having identified those units of comparison, . . . we can then make some adjustments for market conditions

²²Dr. Burak noted that the Uniform Standards of Professional Appraisal Practice “do[] not” require a site visit. Tr. at 476:22-24; see also DX 207 (Appraisal Standards Board, Uniform Standards of Professional Appraisal Practice and Advisory Opinions (ed. 2004)).

²³A highest and best use analysis examines: (1) whether the proposed use is legal; (2) whether the proposed use can be physically accomplished; (3) whether the proposed use is financially feasible; and (4) whether the proposed use is the most profitable use. Tr. at 480:10-25 (Burak).

if need be. As you can see . . . of the[] . . . five sales I used here, none of them took place in June of 2000 which is our date of appraisal, so we have to make some adjustment to reflect differences in market conditions when these sales took place versus the actual date of appraisal

Id. at 482:14-483:16. Dr. Burak stated that, when looking for comparable sales of other timberland property, he identified Cumberland Plateau as the relevant neighborhood to consider, id. at 486:5-24; 487:18-25, chose eighteen benchmark properties, see id. at 556:23-557:1, and “selected sales that basically surrounded the subject property,” id. at 487:5-6. In selecting the five sales for comparison, Dr. Burak was “looking for larger comparable sales and . . . for sales where [he had] good information on the timber and timberland characteristics, and the[] five comparable sales had all those . . . attributes[, including] . . . some detail about the land and timberland components, . . . a mix of the market here as far as the different buyers and sellers, and [they] pretty much cover[] the Cumberland Plateau.” Id. at 487:18-25. He explained that “ideally . . . you would like to have all your comparable sales be as of the date of appraisal, but [because sales are not as frequent] when it comes to large timberland properties . . . , sometimes you have to go out some distance in time from the date of appraisal.” Id. at 487:10-14.

To perform this retrospective appraisal of the Cane property in 2004 “looking back to 2000,” Dr. Burak checked his own sales data for other work performed in Tennessee, contacted “other appraisers . . . knowledgeable in timberland appraisal,” and sent a Sizemore & Sizemore employee “to Bledsoe County . . . [to do] some courthouse research” Id. at 488:25-489:9. The courthouse research, however, merely indicated the occurrence of a sale, and Dr. Burak informally obtained additional information about the timber type and timber volume on a comparable sale property from other appraisers or foresters “that might know something specific about the property.” Id. at 490:25-491:12. Although not required by the Uniform Standards of Professional Appraisal Practice, he performed drive-through site inspections of the comparable sales properties. Id. at 493:11-494:20; see also DX 207 (Appraisal Standards Board, Uniform Standards of Professional Appraisal Practice and Advisory Opinions (ed. 2004)). Dr. Burak testified that, as part of his analysis, he made “adjustments . . . for the differences in the . . . timber stumpage” on the Cane property and on the comparable sales properties. Tr. at 498:5-8. Based on his comparable sales analysis, Dr. Burak opined that Cane’s market value as of June 2000 was \$4,850,000. Id. at 498:11-13; DX 204 (Sizemore & Sizemore Burak Appraisal) at 45-65.

Dr. Burak also determined Cane’s market value as of June 2000 using a cost approach. See DX 204 (Sizemore & Sizemore Burak Appraisal) at 39-44. He explained that, when using the cost approach, there are two factors to consider--the land and the

timber. Tr. at 500:19-22; see also id. at 498:21-500:6 (Burak). The sum of the land value and the stumpage value, with certain adjustments, determines the market value. See id. at 500:7-18 (Burak stating that adjustments may be required because “the sum of the parts may not equal the whole”). To perform this analysis, Dr. Burak selected two sales from his comparable sales data that had separate valuation data for the land and the timber types on the properties. Id. at 500:24-501:2. He determined average per acre land values from the two comparable sales and determined the timber composition on the two properties that he described as “similarly situated” to the Cane property. Id. at 501:2-505:20. Using this information to value Cane’s land and timber inventory, Dr. Burak opined that, as of June 2000, the Cane property had a market value of \$4,700,000. Id. at 504:1-6; id. at 505:24-25.

Additionally, Dr. Burak used the income capitalization approach to determine the market value of the Cane property as of June 2000. See DX 204 (Sizemore & Sizemore Burak Appraisal) at 67-74. He stated that the income capitalization approach “look[s] at [the property] from a[n] investment standpoint, a timber production standpoint that looks at forecasting future revenues and expenses and discounting that to the present.” Tr. at 506:7-10 (Burak). He testified that for the Cane property, he developed a twenty-year “generalized management plan” based on “[a] forecast of typical [timber property management] cost[s]”²⁴ and projected timber harvests and revenues determined from the stumpage information and growth measurements that Dr. Burak’s colleague, Mr. Williams, collected during his timber inventory of the Cane property. See id. at 506:13-508:22. Dr. Burak also factored into his analysis the reversion value of the property, which he defined as “the future value when you sell [the property,] . . . get out of the investment, . . . and get a big chunk of money there at the end” Id. at 510:14-511:1. Running the “same pro forma analysis” on his five comparable sales properties, Dr. Burak “solve[d]” for a discount rate that “[brought] all those future revenues, projected revenues back to what [the purchasers] actually paid for [the comparable sales properties], so [the discount rate is] anchored to the actual price of th[ose] sale[s].” Id. at 509:17-510:4. From the range of discount rates he calculated for the comparable sales properties, Dr. Burak selected a “five and half percent[,] real[,] before[-]tax [discount rate],” see id. at 510:4-7, that he applied to his generalized timber management plan for the Cane property to determine a market value of \$4,490,000 as of June 2000, id. at 517:12-13.

²⁴Relying on his experience with timber landowners, Dr. Burak testified that the principal management costs are forester fees associated with a timber sale because “a lot of [timber property] management that takes place often takes place in the timber sale process.” See Tr. at 512:20-513:15.

Dr. Burak reconciled the three estimates of value respectively derived from the comparable sales approach, the cost approach and the income capitalization approach, giving “more weight to the sales and cost approach[es].” Id. at 517:18-518:13; see also DX 204 (Sizemore & Sizemore Burak Appraisal) at 77-78. Based on that reconciliation, he opined that, as of June 2000, the market value of Cane’s property was \$4,775,000. Id. at 518:14-16.

Dr. Burak also addressed the assumptions underlying the discounted cash flow analysis prepared by plaintiff’s expert, Mr. Black. See PX 158. Dr. Burak observed that the discounted cash flow analysis reflects the compounding of Cane’s past costs between 1979 and 1999 and the discounting of Cane’s future costs between 2000 and 2003.²⁵ Tr. at 527:8-18. Dr. Burak stated that past costs “are sunk [costs that] . . . are of no account [to] [a] new purchaser coming into this in 2000 [because] they didn’t incur those costs . . . [Rather, what] they’re concerned about is from the beginning of the ownership going out into the future.” Id. at 527:21-528:11. Dr. Burak added that Mr. Black’s discounted cash flow analysis is “incomplete” because it does not include the revenue attributable to the “residual timber or reversion of the remaining timber in 2003.” Id. at 528:17-19. Dr. Burak’s testimony did not contradict Mr. Black’s testimony that the roughly 1600 acres of timber harvested on the Cane property in 2001 contained the highest value timber on the Cane tracts. See id. at 536:10-25.

On cross-examination, Dr. Burak testified that when selecting the nineteen benchmark properties and five comparable sales properties to conduct his appraisal, he made “[n]o” effort to eliminate statistical outliers from his analysis. Id. at 555:1-4. Dr. Burak also testified that, although he corrected the Cane timber volumes indicated in his initial report from a pine saw timber volume of 27.77 tons per acre to a pine saw timber volume of 8.49 tons per acre and a hardwood pulpwood volume of 27.77 tons per acre, id. at 562:10-23, and although he acknowledged that saw timber is more valuable on a ton for ton basis than pulpwood, id. at 564:4-9, he did not change any of his other conclusions regarding Cane’s valuation, id. at 563:24-564:3.

Dr. Burak based his opinion of Cane’s market value as of June 2000 on his appraisal of the Cane property using each of the accepted methods of determining market value, the comparable sales approach, the cost approach, and the income capitalization approach. See Snowbank Enters., 6 Cl. Ct. at 485. In performing his appraisal, he conducted a highest and best use analysis of the Cane property in conformance with the Uniform Standards of Professional Appraisal Practice and consistent with the Supreme

²⁵Dr. Burak explained that “mathematically the technical term [for] bringing from the past forward is compounding [and] from the future to the present is discounting.” Tr. at 527:13-16.

Court's guidance. See Olson, 292 U.S. at 255 (stating that "the highest and most profitable use for which . . . the property is adaptable . . . is to be considered" in determining market value of a property). Dr. Burak's use of widely accepted methods to assess the market value of the Cane property approach and his reasoned explanation of the assumptions that he made when performing his appraisal are persuasive evidence to the court that the market value of the Cane tracts as of June 2000, even if somewhat less than \$4,775,000, was nevertheless close to, and quite possibly in excess of, Mr. Black's 2002 stumpage valuation of \$3.9 million dollars and Mr. Williams' 2001 stumpage valuation of \$4.2 million dollars.

In the absence of any objectively supported opinion of Cane's market value as of June 2000 from plaintiff's experts that contradicted either its own 2002 stumpage valuation, see DX 205, or defendant's expert opinions of market value, the court concludes that, after the issuance of the Secretary's Unsuitability Decision in June 2000, the Cane tracts had not been deprived of "'all economically beneficial uses.'" See Tahoe-Sierra, 535 U.S. at 330 (quoting Lucas, 505 U.S. at 1019). Plaintiffs failed to establish at trial that the economic impact of that regulatory act caused a sufficiently "serious financial loss" to constitute a taking. See Cienega Gardens, 331 F.3d at 1341.

III. Conclusion

____ For the foregoing reasons, the court finds that the Cane tracts had a significant market value after the Secretary's Unsuitability Decision on June 17, 2000, see Keystone Bituminous Coal, 480 U.S. at 497, and that the economic impact of that regulatory act did not constitute a sufficiently "serious financial loss" to constitute a taking, see Cienega Gardens, 331 F.3d at 1341. Weighing this factor with the other Penn Central factors, previously decided by the court, the court concludes that plaintiff has failed to establish that its property was taken by the government on June 17, 2000 as claimed. Accordingly, the Clerk of the Court is directed to ENTER JUDGMENT for defendant. No costs.

____ IT IS SO ORDERED.

EMILY C. HEWITT
Judge